

From: Steadman, David (AU1652)
Sent: Wednesday, March 20, 2002 6:35 AM
T: STIC-Biotech/ChemLib
Subject: 09/806,413 sequence search

NAME: David Steadman
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Case Serial #: 09/806,413

Please search the following sequences in commercial databases:

- 1) SEQ ID NO:8 (polypeptide sequence) against polypeptide databases.
- 2) OLIGO search of SEQ ID NO:8 (polypeptide sequence) against polypeptide databases.

Please save search results to diskette.

Thank you very much,
David J. Steadman
308-3934
CM1, 10D-04

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Technical Information Specialist
STIC CM1 6A05 308-4291

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	TYPE OF SEARCH:	VENDOR/COST(where applic.)
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Location: _____	Structures: _____	Questel/Orbit: _____
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Clerical: _____	Patent Family: _____	WWW/Internet: _____
Online time: _____	Other: _____	Other (specify): _____

09/806,413 Search Strategy/Results

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS

RN 9001-22-3 REGISTRY

CN Glucosidase, .beta.- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN .beta.-D-Glucosidase

CN .beta.-D-Glucoside glucohydrolase

CN .beta.-Glucosidase

CN .beta.-Glucoside hydrolase

CN .beta.-Primeverosidase

CN 4-Methylumbelliferyl-.beta.-D-glucopyranoside:.beta.-glucosidase

CN Arbutinase

CN Aryl .beta.-glucosidase

CN Cardenolide 16'-O-glucohydrolase

CN Cellobiase

CN E.C. 3.2.1.21

CN Elaterase

CN Emulsin

CN Esculinase

CN Gentiobiase

CN Hydroxamic acid glucoside .beta.-D-glucosidase

CN Indoxyl .beta.-D-glucosidase

CN Novozym 188

CN Novozyme 188

CN p-Nitrophenyl .beta.-glucosidase

CN Primeverosidase

CN Vicianase

DR 9001-44-9, 9013-43-8

MF Unspecified

CI COM, MAN

LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA,
CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM,
DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MSDS-OHS, NAPRALERT,
PIRA, PROMT, TOXCENTER, USPATFULL

Other Sources: EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

STED DATA FROM 24 ANSWERS - CONTINUE? Y/(N):y

L2 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:30839 CAPLUS
TITLE: Substrate specificity of ??-primeverosidase,
a key enzyme in aroma formation during oolong tea and
black tea manufacturing
AUTHOR(S): Ma, Seung-Jin; Mizutani, Masaharu; Hiratake, Jun;
Hayashi, Kentaro; Yagi, Kensuke; Watanabe, Naoharu;
Sakata, Kanzo
CORPORATE SOURCE: Institute for Chemical Research, Kyoto University,
Kyoto, 611-0011, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (2001),
65(12), 2719-2729
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and
Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We synthesized nine kinds of diglycosides and a monoglycoside of
2-phenylethanol to investigate the substrate specificity of the purified -
primeverosidase from fresh leaves of a tea cultivar (Camellia
sinensis var. sinensis cv. Yabukita) in comparison with the apparent
substrate specificity of the crude enzyme ext. from tea leaves. The crude
enzyme ext. mainly showed -primeverosidase activity, although
monoglycosidases activity was present to some extent. The purified -
primeverosidase showed very narrow substrate specificity with
respect to the glycon moiety, and esp. prominent specificity for the
-primeverosyl (6-O--D-xylopyranosyl--D-glucopyranosyl) moiety. The
enzymes hydrolyzed naturally occurring diglycosides such as
-primeveroside, -vicianoside, -acuminoside, -gentiobioside and
6-O--L-arabinofuranosyl--D-glucopyranoside, but were unable to hydrolyze
synthetic unnatural diglycosides. The purified enzyme was inactive toward
2-phenylethyl -D-glucopyranoside. The enzyme hydrolyzed each of the
diglycosides into the corresponding disaccharide and 2-phenylethanol.
These results indicate the -primeverosidase, a diglycosidase, to
be a key enzyme involved in aroma formation during the tea manufg.
process.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:917334 CAPLUS
DOCUMENT NUMBER: 136:182855
TITLE: Specificity of glycosidases from tea leaves toward
glycidic tea aroma precursors
AUTHOR(S): Kobayashi, Akio; Kubota, Kikue; Wang, Dongmei;
Yoshimura, Takako
CORPORATE SOURCE: Laboratory of Food Chemistry, Department of Nutrition
and Food Sciences, Ochanomizu University, Tokyo,
112-8610, Japan
SOURCE: ACS Symposium Series (2001), 794(Aroma Active
Compounds in Foods), 167-175
CODEN: ACSMC8; ISSN: 0097-6156
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A glycosidase mixt. was sep'd. and purified from fresh tea leaves. Its
activity was detd. through hydrolysis of p-nitrophenyl glucoside. Model
mixts. with the same molar concns. of glucosides and primeverosides
(contg. typical tea aroma compds. as the aglycons) were enzymically
hydrolyzed. The amts. of liberated volatile aglycons were quant. measured
at regular time intervals. Primeverosides were hydrolyzed more rapidly
than the glucosides. Different yields of individual glycosides were obsd.
after 1 or 2 h of incubation for the glucosides and after 15-60 min for
the primeverosides, thus demonstrating the importance of
primeverosidase in forming black tea aroma. However, glycosidase
activity decreased throughout the black tea manufg. process. The highest
prodn. of aroma compds. during black tea processing was due to interaction
between the glycosides and the glycosidases.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:769132 CAPLUS
DOCUMENT NUMBER: 135:287588
TITLE: Crystallization of p-nitrophenyl-.beta.-primeveroside
INVENTOR(S): Ogawa, Koichi; Takada, Masayasu; Sakata, Kanzo; Usui,

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PATENT ASSIGNEE(S): Taichi; Okada, Masanori
SOURCE: Nihon Shokuhin Kako Co., Ltd., Japan
Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001292793	A2	20011023	JP 2000-111815	20000413

AB The p-nitrophenyl-.beta.-primeveroside (I), an useful substrate for primeverosidase, is purified from enzymic reaction soln. of pectinase, xylose donor, and p-nitrophenyl-.beta.-glucoside by concn. and crystn. and. I is useful for enzymic detn. of plant flavor biosynthesis. The method is low in cost and easy, and gives high yield.

L2 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:554447 CAPLUS
DOCUMENT NUMBER: 136:4844
TITLE: Qualitative and quantitative analyses of glycosides as aroma precursors during the tea manufacturing process
AUTHOR(S): Kobayashi, A.; Kubota, K.; Wang, D.
CORPORATE SOURCE: Laboratory of Food Chemistry, Ochanomizu University, Tokyo, 112-8610, Japan
SOURCE: Frontiers of Flavour Science, [Proceedings of the Weurman Flavour Research Symposium], 9th, Freising, Germany, June 22-25, 1999 (2000), Meeting Date 1999, 452-456. Editor(s): Schieberle, Peter; Engel, Karl-Heinz. Deutsche Forschungsanstalt fuer Lebensmittelchemie: Garching, Germany.
CODEN: 69BOX5
DOCUMENT TYPE: Conference
LANGUAGE: English

AB Glycosides are considered to be aroma precursors of black tea. The glycoside fractions extd. at different stages during black tea manuf. were trifluoroacetylated and analyzed by GC and GC-MS. Various glucosides and disaccharides were identified by comparison with authentic samples. Quant. anal. of the glycosides during the manufg. process shows that the primeverosides were greatly decreased, while substantial amts. of the glucosides remain at the final stage of the process. These results are in agreement with the previously described role of primeverosidase as the main enzyme involved in the formation of the black tea aroma. They confirm that the main aroma components, esp. several monoterpene alcs., are formed from the corresponding glycosides in the course of the process of black tea manufg.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:168509 CAPLUS
DOCUMENT NUMBER: 134:352409
TITLE: Analysis of Glycosidically Bound Aroma Precursors in Tea Leaves. 2. Changes in Glycoside Contents and Glycosidase Activities in Tea Leaves during the Black Tea Manufacturing Process
AUTHOR(S): Wang, Dongmei; Kurasawa, Eriko; Yamaguchi, Yuichi; Kubota, Kikue; Kobayashi, Akio
CORPORATE SOURCE: Laboratory of Food Chemistry Department of Nutrition and Food Science, Ochanomizu University, Bunkyo-ku Tokyo, 112-8610, Japan
SOURCE: Journal of Agricultural and Food Chemistry (2001), 49(4), 1900-1903
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glycosides are known to be precursors of the alc. aroma compds. of black tea. They are hydrolyzed by endogenous glycosidases during the manufg. process. Changes in the amts. of these glycosides during the manufg. process were investigated by using a capillary GC-MS anal. after trifluoroacetyl derivatization of the tea glycosidic fractions. Primeverosides were 3-fold more abundant than glucosides in fresh leaves, but they decreased greatly during the manufg. process, esp. during the stage of rolling. After the final stage of fermn., primeverosides had almost disappeared, whereas glucosides were substantially unchanged. These results show that hydrolysis of the glycosides mainly occurred

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during the stage of rolling and confirm that primeverosides are the main black tea aroma precursors. This was also supported by the changes in the glycosidase activities in tea leaves. The glycosidase activities remained at a high level during withering but decreased drastically after rolling.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:628282 CAPLUS

DOCUMENT NUMBER: 133:219459

TITLE: Cloning and expression of cDNA for .beta.-
primeverosidase from tea

INVENTOR(S): Sakata, Kanzo; Mizutani, Masaharu

PATENT ASSIGNEE(S): Amano Pharmaceutical Co., Ltd., Japan

SOURCE: PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000052177	A1	20000908	WO 2000-JP1242	20000302
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2000245476	A2	20000912	JP 1999-56299	19990304
EP 1158052	A1	20011128	EP 2000-906641	20000302
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: JP 1999-56299 A 19990304
WO 2000-JP1242 W 20000302

AB A .beta.-**primeverosidase**-encoding cDNA is isolated from *Camellia* var. *sinensis* by using the oligonucleotide primers derived from the partially detd. amino acid sequences. Also claimed is a method of recombinant prepn. of .beta.-**primeverosidase** by expression of the encoding cDNA sequences in *Escherichia coli* or *Saccharomyces cerevisiae*. The enzyme is useful for the prepn. of tea fragrance and primeverose from .beta.-primeverosides.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:433245 CAPLUS

DOCUMENT NUMBER: 133:319560

TITLE: Glycosidases separation and their relation to alcohol
aroma production in the flowers of *Gardenia*
jasminoides E.

AUTHOR(S): Dong, Shang-Sheng; Tong, Qi-Qing

CORPORATE SOURCE: Dept. of Tea Science, Zhejiang Univ, Hangzhou, 310029,
Peop. Rep. China

SOURCE: Zhejiang Daxue Xuebao, Nongye Yu Shengming Kexueban
(2000), 26(1), 89-92

CODEN: ZXSKFJ; ISSN: 1008-9209

PUBLISHER: Zhejiang Daxue Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Glycosidases were sepd. with CM-Toyopearl 650M column chromatog. in this study. The collected liq. was divided into eleven fractions from A to K by the activities of three glycosidases .beta.-Glucosidase, .beta.-Xylosidase and .beta.-**Primeverosidase**. The relationship between the protein fractions and the seven aroma productions was examd. by observing the aroma-producing reaction of primarily prepd. aroma precursor ext. in the flowers of *Gardenia Jasminoides* E. It was found that the highest .beta.-Glucosidase and .beta.-**Primeverosidase** activities were in H-fraction, while the greatest .beta.-Xylosidase activity was in F-fraction. The enzyme activity of individual fraction showed evident difference in the prodn. of the seven aromas. H-fraction resulted in the prodn. of borneol, linalool, 2-Ph ethanol, Z-3-hexenol and geraniol, while E-fraction brought the highest eugenol prodn. and I-fraction gave the max. benzyl alc. output resp. Of the seven alc. aromas, 2-Ph ethanol and Z-3-hexenol constituted the majority of total prodn. In addn., the expts. in eugenol-primeveroside extd. as substrate from *Camellia sasanqua* L. showed that .beta.-**Primeverosidase** can really hydrolyze the glycosidic bond in primeveroside and there may exist different pathways of eugenol synthesis in *Gardenia Jasminoides* E. and *Camellia sasanqua* L.

L2 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:348961 CAPLUS
DOCUMENT NUMBER: 133:103897
TITLE: .beta.-Primeverosidase relationship with
floral tea aroma formation during processing of oolong
tea and black tea
AUTHOR(S): Sakata, Kanzo
CORPORATE SOURCE: Institute for Chemical Research, Kyoto University,
Kyoto, 611-0011, Japan
SOURCE: ACS Symp. Ser. (2000), 754 (Caffeinated Beverages),
327-336
CODEN: ACSMC8; ISSN: 0097-6156
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 23 refs. discussing the mol. basis of the floral aroma
formation during tea processing, including the role of .beta.-
primeverosidase, its characteristics, and substrate specificity.
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:577963 CAPLUS
DOCUMENT NUMBER: 132:92492
TITLE: Molecular basis of alcoholic aroma formation during
tea processing
AUTHOR(S): Sakata, Kanzo; Watanabe, Naoharu; Usui, Taiichi
CORPORATE SOURCE: Faculty of Agriculture, Shizuoka University, Shizuoka,
422, Japan
SOURCE: Food Health Pac. Rim, Int. Conf. Food Sci. Technol.,
3rd (1999), Meeting Date 1997, 93-105. Editor(s):
Whitaker, John R. Food & Nutrition Press: Trumbull,
Conn.
CODEN: 68BQAF
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Alc. tea aroma compds., such as geraniol and linalool, are known to mainly
contribute to the floral aroma of oolong and black tea, and to be produced
during the fermn. process in their manufg. Interest was raised in oolong
tea which is processed via the most complicated processing to be rich in
floral aroma. Recently, the alc. tea aroma precursors were isolated and
identified as well as the specific enzyme (.beta.-primeverosidase
) concerned with the aroma formation. From the tea leaves (Camellia
sinensis var. sinensis cvs. Shuixian and Maoxie) to be processed to oolong
tea, alc. aroma precursors of geraniol, linalool, 2-phenylethanol, benzyl
alc., linalool oxides I and II (trans- and cis-linalool 3,6-oxide), and Me
salicylate as .beta.-primeverosides (6-O-.beta.-D-xylopyranosyl-.beta.-D-
glucopyranosides) were isolated and identified, guided by an enzymic
hydrolysis (with the acetone powder prepd. from cv. Yabukita) and followed
by GC and GC-MS analyses. Aroma precursors of linalool oxides III and IV
(cis- and trans-linalool 3,7-oxides) and (Z)-3-hexenol were present
particularly as 6-O-.beta.-D-apiofuranosyl-.beta.-glucopyranoside and
.beta.-D-glucopyranoside, resp. .beta.-Primeverosidases was purified from
fresh leaves of cv. Yabukita for Japanese green tea, cv. Shuixian for
oolong tea and a cultivar of C. s. var. assamica for black tea. The mol.
wt. of each enzyme was shown to be 60.5, 60.2 and 60.3 kDa by TOFMS, resp.
The enzymic characteristics (optimum temp., 45.degree.C; stable temp.,
40-45.degree.C; optimum pH, 4; pH stability, pH 3.5; specific activity,
0.90-0.99 unit/mg) were very similar to each other. The enzyme was
confirmed to hydrolyze the aroma precursors, .beta.-primeverosides as well
as 6-O-.beta.-D-apiofuranosyl-.beta.-D-glucopyranoside, into disaccharides
and each aglycon (alc. tea aroma) without further hydrolysis. As a
consequence, the alc. aroma formation during processing of fermented tea
(oolong and black tea) has been substantiated on a mol. basis that most of
the alc. tea aroma compds. are stored mainly as disaccharide glycosides
(.beta.-primeverosides and 6-O-.beta.-D-apiofuranosyl-.beta.-D-
glucopyranosides) and generated by the action of a specific enzyme,
.beta.-primeverosidase, during fermn. process in tea manufg.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:143810 CAPLUS
TITLE: .beta.-Primeverosidase concerned with the
floral tea aroma formation during processing of oolong
tea and black tea
AUTHOR(S): Sakata, K.; Ma, S.; Guo, W.

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CORPORATE SOURCE: Institute for Chemical Research, Kyoto University,
Uji, 611-0011, Japan
SOURCE: Book of Abstracts, 217th ACS National Meeting,
Anaheim, Calif., March 21-25 (1999), AGFD-077.
American Chemical Society: Washington, D. C.
CODEN: 67GHA6
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB Floral tea aroma such as geraniol, linalool, etc. of oolong tea and black tea are known to be generated during ferment. process in their manufg. From the tea leaves (*Camellia sinensis* var. *sinensis* cvs. Shuixian and Maoxie) to be processed to oolong tea, we have isolated and identified alc. aroma precursors of geraniol, linalool, etc. mainly as .beta.-primeverosides (6-O-.beta.-D-xylopyranosyl-.beta.-D-glucopyranosides). We have also purified .beta.-primeverosidases from fresh leaves of cv. Yabukita for Japanese green tea, cv. Shuixian for oolong tea and a cultivar of C. s. var. *assamica*. The mol. wt. of each enzyme was shown to be 60.5, 60.2 and 60.3 kDa by TOFMS, resp. The enzyme was confirmed to effectively hydrolyze the aroma precursors into each aglycon (alc. aroma) and disaccharide without further hydrolysis. Substrate specificity of the enzyme will also be discussed together with preliminary approaches to prep. affinity chromatog. matrix for the enzyme.

L2 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:56625 CAPLUS
DOCUMENT NUMBER: 130:94562
TITLE: Molecular basis of floral aroma formation during
oolong tea manufacturing
AUTHOR(S): Sakata, Kanzo
CORPORATE SOURCE: Inst. Chem. Res., Kyoto Univ., Uji, 611, Japan
SOURCE: Kagaku to Seibutsu (1999), 37(1), 20-27
CODEN: KASEAA; ISSN: 0453-073X
PUBLISHER: Gakkai Shuppan Senta
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review with 14 refs., on the manufg. process of oolong tea products, aroma constituents and alc. aroma precursors (linalyl .beta.-primeveroside, etc.) of oolong tea leaves, isolation and substrate specificity of .beta.-primeverosidase of tea leaves, and distribution of .beta.-primeveroside aroma compds. and .beta.-primeverosidase in tea leaves.

L2 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:325130 CAPLUS
DOCUMENT NUMBER: 128:282083
TITLE: Characterization of .beta.-Primeverosidase,
Being Concerned with Alcoholic Aroma Formation in Tea
Leaves To Be Processed into Black Tea, and Preliminary
Observations on Its Substrate Specificity
AUTHOR(S): Ijima, Yasuyuki; Ogawa, Kenji; Watanabe, Naoharu;
Usui, Taichi; Ohnishi-Kameyama, Mayumi; Nagata,
Tadahiro; Sakata, Kanzo
CORPORATE SOURCE: Faculty of Agriculture Department of Applied
Biological Chemistry, Shizuoka University, Shizuoka,
422, Japan
SOURCE: J. Agric. Food Chem. (1998), 46(5), 1712-1718
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A .beta.-primeverosidase has been, for the first time, purified from fresh leaves of a cultivar (*Camellia sinensis* var. *assamica*) for black tea in the same way as in the case of green and oolong tea leaves previously reported. The mol. wt. was shown to be 60,300 by MALDI-TOFMS anal. Its pI, optimum temp., and pH are 9.5, 45, and 4, resp. The enzyme is stable below 40 and between pH 4 and 5. These enzymic characteristics are very similar to those of the .beta.-primeverosidases from cvs. Yabukita and Shuixian which are exclusively processed from green and oolong tea, resp. Each .beta.-primeverosidase from tea leaves for green, oolong, and black teas was further purified by HPLC (ODS) and digested by trypsin to be analyzed by HPLC (ODS capillary column). Their chromatograms were not identical but very similar to each other. The mol. wt. differences among these enzymes (60,500, 60,200, and 60,300 from the cultivars for green, oolong, and black teas, resp.) suggest that these .beta.-primeverosidases are enzymically identical, but slightly different on their mol. basis. Next, several kinds of disaccharide glycosides which had been isolated as aroma precursors were reacted with endogenous .beta.-primeverosidase and .beta.-glucosidase fractions from fresh tea

leaves (cv. Yabukita). The .beta.-**primeverosidase** hydrolyzed .beta.-primeverosides and 6-O-.beta.-D-apiofuranosyl-.beta.-D-glucopyranosides isolated as aroma precursors from tea leaves more effectively than other disaccharide glycosides to hydrolyze them into each disaccharide and aglycon. It also hydrolyzed both .beta.-vicianoside and 6-O-.alpha.-L-arabinofuranosyl-.beta.-D-glucopyranoside into each disaccharide and aglycon, but the amt. of generated aroma was smaller than that produced by the .beta.-glucosidase fraction.

L2 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:403249 CAPLUS
DOCUMENT NUMBER: 127:120817
TITLE: The Role of Diglycosides as Tea Aroma Precursors: Synthesis of Tea Diglycosides and Specificity of Glycosidases in Tea Leaves
AUTHOR(S): Matsumura, Sachiko; Takahashi, Shunya; Nishikitani, Mariko; Kubota, Kikue; Kobayashi, Akio
CORPORATE SOURCE: Laboratory of Food Chemistry Department of Nutrition and Food Science, Ochanomizu University, Tokyo, 112, Japan
SOURCE: J. Agric. Food Chem. (1997), 45(7), 2674-2678
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Two general synthetic routes were established in order to synthesize two diglycosides, primeverosides (1) and vicianosides (2), found in tea leaves. Procedure 1 is based on the Koenig-Knorr type of condensation of aglycon alcs. and 1-.alpha.-bromohexabenzoylprimeverose (6) and is suitable for the condensation of primary alcs. Procedure 2 is to combine tribenzoyl-.beta.-D-glucoside (8) and 1-.alpha.-bromotribenzoylxylose (4). The primeveroside of a tertiary alc. was synthesized by this method which is also applicable to the synthesis of vicianosides. The hydrolysis rate of each of the 12 synthesized glycosides by a crude tea enzyme was evaluated, which suggest that the main glycosidase is **primeverosidase** and the enzyme mixt. shows substrate specificity to both the carbohydrate and aglycon moieties.

L2 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:132728 CAPLUS
DOCUMENT NUMBER: 126:143473
TITLE: Purification of a .beta.-**primeverosidase** concerned with alcoholic aroma formation in tea leaves (cv. Shuixian) to be processed to oolong tea
AUTHOR(S): Ogawa, Kenji; Ijima, Yasuyuki; Guo, Wenfei; Usui, Taichi; Tong, Qiqing; Watanabe, Naoharu; Sakata, Kanzo
CORPORATE SOURCE: Department of Applied Biological Chemistry Faculty of Agriculture, Shizuoka University, Shizuoka, 422, Japan
SOURCE: Journal of Agricultural and Food Chemistry (1997), 45(3), 877-882
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB .beta.-**Primeverosidase**, which is concerned with the alc. aroma formation in tea leaves, was purified from fresh tea leaves (Camellia sinensis var. Sinensis cv. Shuixian) to be processed to oolong tea by successive pptn. with acetone and ammonium sulfate followed by column chromatog. on CM-Toyopearl and Mono S-HR. The mol. mass was shown to be 61 and 60.3 kDa by SDS-PAGE and TOFMS, resp. Its pI, optimum temp., and pH are 9.5, 45.degree.C, and 4, resp. The enzyme is stable below 45.degree.C and between pH 3 and 5. The enzyme hydrolyzes .beta.-primeveroside into primeverose and an aglycon without further hydrolysis. These enzymic characteristics were found to be quite similar to those of the .beta.-**primeverosidase** from cv. Yabukita exclusively processed to green tea. As most of the alc. tea aroma precursors have been isolated as .beta.-primeverosides, the main route of the aroma formation in oolong tea has been elucidated on a mol. basis.

L2 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:736463 CAPLUS
DOCUMENT NUMBER: 126:28380
TITLE: Studies on the aroma formation mechanism in oolong tea. Part V. isolation and characterization of a .beta.-**primeverosidase** concerned with alcoholic aroma formation in tea leaves
AUTHOR(S): Guo, Wenfei; Ogawa, Kenji; Yamauchi, Kazuyo; Watanabe, Naoharu; Usui, Taichi; Luo, Shaojun; Sakata, Kanzo

CORPORATE SOURCE: Department of Applied Biological Chemistry, Shizuoka University, Shizuoka, 422, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (1996), 60(11), 1810-1814
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A .beta.-primeverosidase (I) concerned with alc. aroma formation during tea processing was purified from cv. Yabukita (*Camellia sinensis* var. *sinensis*). The acetone powder was subjected to (NH₄)₂SO₄ pptn. and then to chromatog. purifn. with CM-Toyopearl 650M to give 3 active fractions, glucosidases (GI, GII, and GIII fractions). The main GI-GII fraction was characterized as a I, which hydrolyzed a .beta.-primeveroside into an aglycon and a primeverose (6-O-.beta.-D-xylopyranosyl-.beta.-D-glucopyranose) and was mainly concerned with alc. tea aroma formation. The GI-GII fraction was further sepd. into GIIa (main) and GIIb (minor) by ion exchange Mono S column chromatog. GIIa was detd. to be a monomeric protein of 61 kDa with a pI of 9.4. GIIa was stable at temps. of <45.degree. and pH 5-7, and exhibited its highest activity at 50.degree. and at pH 5.

L2 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:703733 CAPLUS
DOCUMENT NUMBER: 126:18002
TITLE: Molecular basis of alcoholic aroma formation in tea leaves
AUTHOR(S): Sakata, Kanzo; Ogawa, Kenji; Ijima, Yasuyuki; Watanabe, Naoharu; Usui, Taiichi; Guo, Wenfei; Moon, Jae-Hak; Dong, Shangsheng; Tong, Qiqing; Luo, Shaojun
CORPORATE SOURCE: Faculty Agriculture, Shizuoka University, Japan
SOURCE: Tennen Yuki Kagobutsu Toronkai Koen Yoshishu (1996), 38th, 511-516
CODEN: TYKYDS
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In the course of studies on aroma formation mechanism in oolong tea (*Camellia sinensis sinensis*), the mol. basis was shown in that most of alc. tea aroma is generated by endogenous enzymic hydrolysis of glycosidic aroma precursors during tea manufg. The main alc. aroma precursors of geraniol, linalool, 2-phenylethanol, benzyl alc., linalool oxides I and II (trans- and cis-linalool 3,6-oxides) and Me salicylate as .beta.-primeverosides, guided by an enzymic hydrolysis (with the acetone powder prepd. from cv. Yabukita) followed by GC and GC-MS analyses were isolated and identified. Aroma precursors of linalool oxides III and IV (trans- and cis-linalool 3,7-oxides) and (Z)-3-hexenol were exceptionally isolated as 6-O-.beta.-D-apiofuranosyl-.beta.-D-glucopyranosides and a .beta.-D-glucopyranoside, resp. from oolong tea leaves. In cv. Yabukita for green tea, benzyl alc. was stored as ca. 1:1 mixt. of .beta.-primeveroside and .beta.-D-glucopyranoside. As a preliminary expt., a new glycosidase (.beta.-primeverosidase) was purified from fresh leaves of cv. Yabukita by ammonium sulfate pptn. followed by chromatogs. with CM Toyopearl and Mono S-MR. This glycosidase was one of the main glycosidases involved in the alc. aroma formation in tea leaves. This is the 2nd example of .beta.-primeverosidase. Purifn. of the .beta.-primeverosidase from fresh oolong tea leaves was also carried out in the same manner. The mol. wt. was shown lobe 61 and 60.3 kDa by SiDS-PAGE and TGFMS, resp. Its pI and Optimum temp. and pM are 9.5, 45.degree.C and 4, resp. The enzyme is stable below 45.degree.C, and between pH 3 to 5. These enzymic characteristics are quite similar to those of the .beta.-primeverosidase from cv. Yabukita. The .beta.-primeverosidase hydrolyzed a .beta.-apiofuranoside into each constituent dissacharide and aglycon without further hydrolysis as effectively as in the case of a .beta.-primeverosidase. Amts. of alc. aroma precursor and glycosidase activity in each part of the tea shoot (cvs. Yabukita and Irumi) were indirectly measured by means of a crude enzyme assay. The aroma precursors were abundant in young leaves and decreased as the leaf aged. Glycosidase activity also decreased as leaves aged, but was high in stems.

L2 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:476974 CAPLUS
DOCUMENT NUMBER: 125:108892
TITLE: .beta.-Primeverosidase and its preparation from tea leaves
INVENTOR(S): Sakata, Kanzo; Hara, Masahiko

09/806,413 Search Strategy/Results

PATENT ASSIGNEE(S): Mitsui Norin Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08140675	A2	19960604	JP 1994-311281	19941122
JP 3101168	B2	20001023		

AB **Primeverosidase**, useful in the prepn. of non-volatile tea aroma, is extd. from tea leaves and characterized. The enzyme exhibits a pH optimum 4-6, temp. optimum 50.degree., and mol. wt. 61,000 by SDS-PAGE.

L2 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:609851 CAPLUS

DOCUMENT NUMBER: 123:31759

TITLE: Studies on aroma formation mechanism of oolong tea.
Part 4. A **primeverosidase** as a main glycosidase concerned with the alcoholic aroma formation in tea leaves

AUTHOR(S): Guo, Wenfei; Yamauchi, Kazuyo; Watanabe, Naoharu; Usui, Taiichi; Luo, Shaojun; Sakata, Kanzo

CORPORATE SOURCE: Fac. Agriculture, Shizuoka Univ., Shizuoka, 422, Japan

SOURCE: Biosci., Biotechnol., Biochem. (1995), 59(5), 962-4
CODEN: BBBIEJ; ISSN: 0916-8451

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors isolated and characterized a **primeverosidase** from fresh tea leaves (*Camellia sinensis* var. *sinensis* cv. Yabukita) as a main glycosidase involved in alc. aroma (geraniol, linalool, benzyl alc., 2-phenylethanol, linalool oxides etc.) formation from their aroma precursors (.beta.-primeverosides; 6-O-.beta.-D-xylopyranosyl-.beta.-D-glucopyranosides) in tea leaves.

L2 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:530915 CAPLUS

DOCUMENT NUMBER: 107:130915

TITLE: Azoxyglycoside contents in seeds of several cycad species and various parts of Japanese cycad

AUTHOR(S): Yagi, Fumio; Tadera, Kenjiro

CORPORATE SOURCE: Dep. Agric. Chem., Kagoshima Univ., Kagoshima, 890, Japan

SOURCE: Agric. Biol. Chem. (1987), 51(6), 1719-21

CODEN: ABCHA6; ISSN: 0002-1369

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The cycasin content in seeds of a series of cycad species ranged from 0.08 to 1.3%; macrozamin in this same series ranged 0.0-1.77%. The 2 azoxyglycosides were also detected in various amts. in other organs (leaves, pith, tuberous roots) of the Japanese species (*Cycas revoluta*) from the above series. The importance of measuring levels of methylazoxymethanol when estg. azoxyglycoside contents of plants (in connection with glycosidase activities) is discussed.

L2 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1980:528734 CAPLUS

DOCUMENT NUMBER: 93:128734

TITLE: Detection and distribution of **primeverosidase** and **genteobiosidase**. Observations on enzymic activities of aqueous macerations of powdered plants

AUTHOR(S): Plouvier, Victor

CORPORATE SOURCE: Lab. Chim. Appl., Corps Org. Mus. Hist. Nat., Paris, 75005, Fr.

SOURCE: C. R. Seances Acad. Sci., Ser. D (1980), 290(15), 1071-4

CODEN: CHDDAT; ISSN: 0567-655X

DOCUMENT TYPE: Journal

LANGUAGE: French

AB In 130 species tested for **primeverosidase**, the enzyme occurred more frequently than rutinase, esp. in the mushrooms (Basidiomycetes), certain Cryptogams, and nearly all **primeveroside**-contg. higher plants. The distribution of **gentiobiosidase** was quite similar to that of **primeverosidase**. The enzymic activities were greater in powd. plant preps. than in preps. obtained from filtered aq. macerations.

09/806,413 Search Strategy/Results

L2 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1926:13106 CAPLUS
DOCUMENT NUMBER: 20:13106
ORIGINAL REFERENCE NO.: 20:1632e
TITLE: The presence, in emulsin of almonds, of two new enzymes, **primeverosidase** and **primeverase**
AUTHOR(S): Bridel, M.
SOURCE: Bull. soc. chim. biol. (1926), 8, 67-70
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB See C. A. 19, 2514; 20, 435.

L2 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1926:13096 CAPLUS
DOCUMENT NUMBER: 20:13096
ORIGINAL REFERENCE NO.: 20:1631h
TITLE: **Primeverose**, **primeverosides** and **primeverosidase**
AUTHOR(S): Bridel, M.
SOURCE: Bull. soc. chim. biol. (1925), 7, 925-32
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB See C. A. 19, 2514.

L2 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1926:3501 CAPLUS
DOCUMENT NUMBER: 20:3501
ORIGINAL REFERENCE NO.: 20:435a-b
TITLE: Presence in the emulsin of almonds of two new enzymes, **primeverosidase** and **primeverase**
AUTHOR(S): Bridel, Marc
SOURCE: Compt. rend. (1925), 181, 523-4
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C. A. 19, 2514. The emulsin of almonds, when used in sufficient amts. and for sufficient time (30 days), hydrolyzes an aq. soln. of **monotropitoside**. The hydrolysis is not arrested by **primeverose**, the latter being hydrolyzed to glucose and xylose. Therefore, the emulsin of almonds contains 2 enzymes which have not been noted hitherto, viz., **primeverosidase** and **primeverase**.

L2 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1925:19316 CAPLUS
DOCUMENT NUMBER: 19:19316
ORIGINAL REFERENCE NO.: 19:2514c-e
TITLE: **Primeverose**, the **primeverosides** and the **primeverosidase**
AUTHOR(S): Bridel, Marc
SOURCE: Compt. rend. (1925), 180, 1421-3
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C. A. 19, 2108. From 18 kg. of fresh roots of *Primula officinalis* Jacq., 20 g. of a cryst. mixt. of **primeverine** and **primulaverine** were extd. A fermentative hydrolysis of this mixt. yielded **primeverose** which is identical to xyloglucose extd. from **gentiacaucoside**, **monotropitoside** and from **rhamnicoside**. The reducing power of these glucosides is 0.646 to 0.648 of that of glucose and not 0.590 as calcd. by Goris, Mascr. acte. e and Vischniac. The name **primeverosides** is proposed as a generic term to include the 5 cryst. glucosides which yield **primeverose** upon fermentative hydrolysis. Three of these **primeverosides** possess similar constitutions; thus **monotropitoside** yields on hydrolysis Me salicylate; **primeveroside** and **primulaveroside** are isomers and yield Me methoxysalicylate, the first giving the m- and the second the p-compd. In the 2 remaining **primeverosides** the products combined with **primeverose** are different; **gentiacaucoside** is a flavonic deriv., and **rhamnicogenol** from **rhamnicoside** is a pentahydroxymethylanthrol. The term **primeverase** should mean the enzyme of **primeverose** which yields xylose and glucose; it is not yet known to exist in the vegetable kingdom. **Primeverosidase** should designate the enzyme of the l-rotatory **primeverosides** derived from β -**primeverose**; it has been found in several species of plants.

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YOU HAVE REQUESTED DATA FROM 51 ANSWERS - CONTINUE? Y/(N):y

L7 ANSWER 1 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:572129 CAPLUS

DOCUMENT NUMBER: 129:310356

TITLE: Relation of intestinal bacteria to pharmacological effects of glycosides

AUTHOR(S): Kobashi, Kyoichi; Akao, Teruaki

CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Toyama Medical and Pharmaceutical University, Toyama, 930-01, Japan

SOURCE: Biosci. Microflora (1997), 16(1), 1-7

CODEN: BIMIFM; ISSN: 1342-1441

PUBLISHER: Japan Bifidus Foundation

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Popular natural glycosides such as glycyrrhizin (GL, licorice), barbaloin (aloe) and baicalin (BG, *Scutellaria baicalensis*) were studied regarding their metabolic fates and actions in relation to intestinal bacteria by using germ-free and gnotobiotic rats. When GL was administered orally, the aglycon, glycyrrhetic acid (GA), was not detected in the plasma or intestinal contents of germ-free rats, but was detected in considerable amounts in the plasma and intestinal contents of conventional and gnotobiotic rats, associated with the human intestinal bacterium *Eubacterium* sp. strain GLH capable of hydrolyzing GL to GA. GL was not detected in the plasma of the three groups of rats after oral administration. GL was effective in the conventional and gnotobiotic rats with liver injury caused experimentally by carbon tetrachloride, but not in germ-free rats with liver injury. These results indicate that orally administered GL is a prodrug and activated to GA by intestinal bacteria. Barbaloin, a laxative, was ineffective in conventional rats, but showed strong purgative action to gnotobiotic rats associated with the human intestinal bacterium *Eubacterium* sp. strain BAR, which is capable of transforming barbaloin to aloe-emodin anthrone. Barbaloin is also a prodrug and activated to aloe-emodin anthrone by human intestinal bacteria. Animal differences in the laxative effect of barbaloin are due to species differences in intestinal bacteria. When BG was administered orally to conventional rats, BG, but not the aglycon baicalein (B), was found in the plasma. However, when BG was administered to germ-free rats, both BG and B were hardly detected in the plasma. Even after oral administration of B, BG was detected, but not B. These findings suggest that BG is a prodrug hydrolyzed to B by intestinal bacteria, and then conjugated to BG from the absorbed B in the body.

L7 ANSWER 2 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:234046 CAPLUS

DOCUMENT NUMBER: 129:24861

TITLE: Purification and characterization of a novel .beta.-glucosidase from *Clavibacter michiganense* that hydrolyzes glucosyl ester linkage in steviol glycosides

AUTHOR(S): Nakano, Hirofumi; Okamoto, Katsuyuki; Yatake, Tsuneya; Kiso, Taro; Kitahata, Sumio

CORPORATE SOURCE: Osaka Municipal Technical Research Institute, Osaka, 536, Japan

SOURCE: J. Ferment. Bioeng. (1998), 85(2), 162-168

CODEN: JFBIEX; ISSN: 0922-338X

PUBLISHER: Society for Fermentation and Bioengineering, Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *C. michiganense* was identified as a microorganism that hydrolyzed the glucosyl ester linkages at site 19 of steviol glycosides. An enzyme that catalyzes the hydrolysis was purified from the cell-free ext. using streptomycin treatment, (NH₄)₂SO₄ fractionation, Q-Sepharose anion exchange chromatog., Sephacryl S-100 gel filtration, and ether-Toyopearl hydrophobic chromatog. The purified enzyme migrated as a single protein band in PAGE in the presence and absence of SDS, and isoelectric focusing. The mol. wt. was estimated to be approx. 65 kDa, both by gel filtration and SDS-PAGE. A pI of 4.6, was obtained using isoelectric focusing. The enzyme was most active at around pH 7.5 and at 45 degree, and was stable at pH 6-10 and below 40 degree. Both Hg²⁺ and p-chloromercuribenzoate inhibited activity. The enzyme hydrolyzed glucosyl ester linkages at site 19 of rebaudioside A, stevioside, rubusoside, and steviol monoglucosyl ester, although it did not cleave the 13-O-linked glucosyl residue of rubusoside and steviol monoside. A transglucosylation product having a cellobiosyl residue at site 19 was

formed when rubusoside was used as a glucosyl donor and acceptor. The enzyme hydrolyzed glucosidic linkages in p-nitrophenyl .beta.-glucoside faster than glucosyl ester linkages in the steviol glycosides. It also acted on Ph .beta.-glucoside and salicin, and faintly on sophorobiose and cellobiose. These results indicate that the enzyme is a noval .beta.-glucosidase that hydrolyzes ester linkages.

L7 ANSWER 3 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:101459 CAPLUS

DOCUMENT NUMBER: 128:228347

TITLE: Effect of Methanobrevibacter sp MF1 inoculation on glycoside hydrolase and polysaccharide depolymerase activities, wheat straw degradation and volatile fatty acid concentrations in the rumen of gnotobiotically-reared lambs

AUTHOR(S): Fonty, Gerard; Williams, Alan G.; Bonnemoy, Frederique; Morvan, Brieuc; Withers, Susan E.; Gouet, Philippe

CORPORATE SOURCE: Laboratoire de Microbiologie, INRA, Centre de Recherches de Clermont-Ferrand-Theix, Saint-Genes-Champanelle, Fr.

SOURCE: Anaerobe (1997), 3(6), 383-389

CODEN: ANAEF8; ISSN: 1075-9964

PUBLISHER: Academic Press Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Four naturally born lambs were placed in sterile isolators 24 h after birth before the natural establishment of cellulolytic microorganisms and archaea methanogens. At the age of 6 wk they were inoculated with pure cultures of the strains FDI and 007 of Ruminococcus flavefaciens and at the age of 4 mo with a pure culture of Methanobrevibacter sp. MF1. Following the establishment of MF1, the population of R. flavefaciens slightly increased in the rumen of the four lambs, there was also an increase in straw degrdn., in the activity of some glycoside and polysaccharide hydrolases of the adherent microbial populations and in the concn. of acetate in ruminal contents.

L7 ANSWER 4 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:17894 CAPLUS

DOCUMENT NUMBER: 128:101141

TITLE: Description of the .beta.-glucosidase activity of wine yeasts

AUTHOR(S): Mateo, J. J.; Di Stefano, R.

CORPORATE SOURCE: Istituto Sperimentale per Enologia, Asti, 14100, Italy

SOURCE: Food Microbiol. (1997), 14(6), 583-591

CODEN: FOMIE5; ISSN: 0740-0020

PUBLISHER: Academic Press Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB .beta.-Glucosidase activity of different Saccharomyces strains has been detected on the basis of its hydrolytic activity on para-nitrophenyl-.beta.-glucoside (pNPG) and terpene glycosides of Muscat wine. This enzymic activity is induced by the presence of bound .beta.-glucose as the only carbon source in the medium and seems to be a characteristic of yeast strain. .beta.-Glucosidase is assocd. with the cell wall and is found in the insol. fraction obtained from lysed yeast cells. Saccharomyces .beta.-glucosidase is quite glucose independent, so that its activity is reduced by about 40% in the presence of 200 g/l of glucose, but it is inhibited by about 50% with 5% ethanol in the medium; therefore, its technol. use seems to be restricted to the first stages in the wine-making process.

L7 ANSWER 5 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:555855 CAPLUS

DOCUMENT NUMBER: 127:231743

TITLE: Characterization of a bacterial consortium degrading the lignin model compound vanillyl-.beta.-D-glucopyranoside

AUTHOR(S): Cespedes, Ricardo; Gonzalez, Bernardo; Vicuna, Rafael

CORPORATE SOURCE: Facultad Ciencias Biologicas, P. Universidad Catolica Chile, Santiago, Chile

SOURCE: J. Basic Microbiol. (1997), 37(3), 175-180

CODEN: JBMIEQ; ISSN: 0233-111X

PUBLISHER: Akademie Verlag

DOCUMENT TYPE: Journal

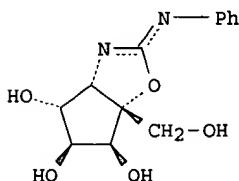
LANGUAGE: English

AB Aryl .beta.-D-glycosides were described as intermediates in lignin biodegrdn. The catabolism of this kind of compds. was poorly studied.

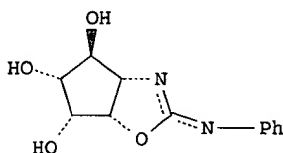
The isolation and initial characterization of a bacterial consortium degrading vanillyl .beta.-D-glucopyranoside is reported. The consortium is able to grow on and completely degrade the dimer vanillyl .beta.-D-glucopyranoside. The consortium is composed of 3 microorganisms: *Chryseomonas luteola*, *Moraxella phenylpyruvica*, and *Pseudomonas* sp. Complete degrading of the glycoside required *C. luteola* and *M. phenylpyruvica*, although only *C. luteola* cleaved the aryl-glycoside linkage. Oxidation of vanillyl alc., a product of the aryl-glycoside cleaving reaction, to the resp. acid was carried out by *M. phenylpyruvica*. Vanillic acid was used as growth substrate by *M. phenylpyruvica* and *Pseudomonas*. *C. luteola* can grow on other aryl .beta.-glycosides, accumulating the aryl moiety in the culture. .beta.-Glucosidase in *C. luteola* is probably the key enzyme in the catabolism of aryl-glycosides by this consortium.

L7 ANSWER 6 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:406195 CAPLUS
 DOCUMENT NUMBER: 127:158309
 TITLE: Synthesis and biological evaluation of potent glycosidase inhibitors: N-phenyl cyclic isourea derivatives of 5-amino- and 5-amino-C-(hydroxymethyl)-1,2,3,4-cyclopentanetetraols
 AUTHOR(S): Uchida, Chikara; Kimura, Hiroshi; Ogawa, Seiichiro
 CORPORATE SOURCE: Department Applied Chemistry, Faculty Science Technology, Keio University, Yokohama, 223, Japan
 SOURCE: Bioorg. Med. Chem. (1997), 5(5), 921-939
 CODEN: BMECEP; ISSN: 0968-0896
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
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I



II

AB Twenty-four stereoisomers of 5-amino- and 5-amino-C-(hydroxymethyl)-1,2,3,4-cyclopentanetetraols and twenty-six of the corresponding N-Ph cyclic isourea derivs. were assayed for inhibitory activity against six glycosidases. Among them, as has been expected for structure mimics of putative transition state glucopyranosyl cation for glycoside hydrolysis, 1L-(1,2,4,5/3)-5-amino-1-C-(hydroxymethyl)-1,2,3,4-cyclopentanetetraol and its N-Ph cyclic isourea deriv. were shown to have strong inhibitory activity, IC50 4.times.10⁻⁷ and 7.6.times.10⁻⁹ M, resp., against baker's yeast .alpha.-glucosidase. It has been analogously explained that compds. R,S-I and R,S-II possessed high inhibitory potency against *Escherichia coli* and bovine liver .beta.-galactosidases, resp.

L7 ANSWER 7 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:404903 CAPLUS
 DOCUMENT NUMBER: 127:95466
 TITLE: Synthesis of isopropyl-1-thio-.beta.-D-glucopyranoside (IPTGlc), an inducer of *Aspergillus niger* B1 .beta.-glucosidase production
 AUTHOR(S): Birk, Ruth; Ikan, Ariel; Bravdo, Benami; Braun, Sergei; Shoseyov, Oded
 CORPORATE SOURCE: The Kennedy-Leigh Center for Horticultural Research, The Faculty of Agriculture, The Hebrew University of Jerusalem, Rehovot, 76100, Israel
 SOURCE: Appl. Biochem. Biotechnol. (1997), 66(1), 25-30
 CODEN: ABIBDL; ISSN: 0273-2289
 PUBLISHER: Humana
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Prodn. of .beta.-glucosidase in *Aspergillus niger* B1 is subjected to catabolic repression by glucose. *Aspergillus niger* B1 grown on bran as a

carbon source secreted .beta.-glucosidase. The max. level of the enzyme was reached after 7 d of fermn. Addn. of 1% glucose to the medium suppressed .beta.-glucosidase prodn. to undetectable levels. In this study, the org. synthesis of a potential inducer of .beta.-glucosidase prodn. by *A. niger* B1's reported. Isopropyl-1-thio-.beta.-D-glucopyranoside (IPTGlc) was synthesized using a two-step org. synthesis protocol. The H-NMR data agreed with those reported previously for the galactoside analog. When IPTGlc was added 24 h after inoculation at a final concn. of 0.4 mM, similar levels of .beta.-glucosidase were reached 3 to 4 d earlier as compared to fermn. without IPTGlc induction. In practice, this may translate to a more efficient method of producing .beta.-glucosidase from this fungus.

L7 ANSWER 8 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:365001 CAPLUS
DOCUMENT NUMBER: 127:17869
TITLE: The synthesis of novel enzyme inhibitors and their use in defining the active sites of glycan hydrolases
AUTHOR(S): Stick, Robert V.
CORPORATE SOURCE: Department of Chemistry, The University of Western Australia, Nedlands, 6907, Australia
SOURCE: Top. Curr. Chem. (1997), 187(Glycoscience), 187-213
CODEN: TPCCAQ; ISSN: 0340-1022
PUBLISHER: Springer
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 71 refs. on the design and prepn. of epoxyallyl glycosides, aziridines, and thirans as potential inhibitors of .beta.-D-glucosidases and .beta.-D-glucan hydrolases that are responsible for various processes that occur in plants and bacteria. Some time is devoted to the concept of ".beta.-acarbose", a diastereoisomer of the naturally occurring acarbose, as a novel, competitive inhibitor of the above enzymes. Throughout this work, attention was continually directed to the synthesis of potential inhibitors in optically-pure form.

L7 ANSWER 9 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:362869 CAPLUS
DOCUMENT NUMBER: 127:92478
TITLE: .beta.-Mannanolytic system of *Aureobasidium pullulans*
AUTHOR(S): Kremnický, Lubomír; Biely, Peter
CORPORATE SOURCE: Institute Chemistry, Slovak Academy Sciences, Bratislava, 84238, Slovakia
SOURCE: Arch. Microbiol. (1997), 167(6), 350-355
CODEN: AMICCW; ISSN: 0302-8933
PUBLISHER: Springer
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A xylanolytic yeast strain *Aureobasidium pullulans* NRRL Y 2311-1, was found to produce all enzymes required for complete degrdn. of galactomannan and galactoglucomannan. The enzymes differed in function and cellular localization: endo-.beta.-1,4-mannanase was secreted into the culture fluid, .beta.-mannosidase was strictly intracellular, and .alpha.-galactosidase and .beta.-glucosidase were found both extracellularly and intracellularly. Among these enzyme components, only extracellular .beta.-mannanase and intracellular .beta.-mannosidase were inducible. The prodn. of .beta.-mannanase and .beta.-mannosidase was 10- to 100-fold higher in galactomannan medium than in medium with one of the other carbon sources. .beta.-Mannanase and .beta.-mannosidase were coinduced in glucose-grown cells by galactomannan, galactoglucomannan, and .beta.-1,4-manno-oligosaccharides. The natural inducer of extracellular .beta.-mannanase and intracellular .beta.-mannosidase appeared to be .beta.-1,4-mannobiose. Synthesis of both enzymes was completely repressed by glucose, mannose, or galactose. The synthetic glycoside methyl-.beta.-D-mannopyranoside served as a nonmetabolizable inducer of both .beta.-mannosidase and .beta.-mannanase.

L7 ANSWER 10 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:298685 CAPLUS
DOCUMENT NUMBER: 126:290463
TITLE: Glycoside hydrolase production by an anaerobic rumen fungus *Caecomyces communis*
AUTHOR(S): Bata, J.; Gerbi, C.
CORPORATE SOURCE: Laboratoire de biologie cellulaire et moléculaire des parasites opportunistes, Université Blaise Pascal, Batiment Biologie A, Aubière, 63177, Fr.
SOURCE: Res. Microbiol. (1997), 148(3), 263-269
CODEN: RMCREW; ISSN: 0923-2508
PUBLISHER: Elsevier

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The ruminal fungus *Caecomyces communis* was grown anaerobically either in a discontinuous cultivation system or in a fermentor with daily withdrawal and addn. of fresh medium. Lowe and Orpin media were tested. The best culture conditions for glycoside hydrolase prodn. were obtained in Lowe medium with daily fresh medium addn., whereas the Orpin medium with ruminal fluid was favorable to fungal growth and to the enzyme export process. Among glycoside hydrolases assessed in both culture fluid and cellular homogenate, .beta.-D-fucosidase activity was preponderant. Most studied enzymes were mainly assocd. with cells (from 50% to 99%). Glycoside hydrolase activities were constitutive, but their level was regulated by a carbon source. .beta.-D-Fucosidase and .beta.-D-xylosidase activity prodn. was activated by the assocn. of glucose plus cellobiose, whereas .beta.-D-glucosidase activity prodn. was stimulated by cellobiose alone. Enzyme release could be favored by glucose alone or by Ray grass hay added to glucose plus cellobiose.

L7 ANSWER 11 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:271456 CAPLUS

DOCUMENT NUMBER: 126:343777

TITLE: Synthesis of the 2-deoxyisomaltose analog of acarbose by an improved route to chiral valieneamines

AUTHOR(S): Tagmose, Tina M.; Bols, Mikael

CORPORATE SOURCE: Dep. Organic Chem., Technical Univ. Denmark, Aarhus, DK-8000, Den.

SOURCE: Chem.--Eur. J. (1997), 3(3), 453-462

CODEN: CEUJED; ISSN: 0947-6539

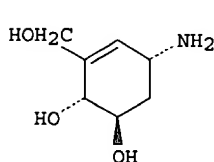
PUBLISHER: VCH

DOCUMENT TYPE: Journal

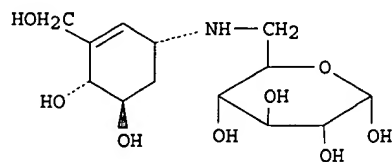
LANGUAGE: English

OTHER SOURCE(S): CASREACT 126:343777

GI



I



II

AB A 2-deoxyisomaltose analog of acarbose was stereoselectively synthesized in 11 steps with a total yield of 7% starting from 2,6-dibromo-2,6-dideoxy-D-mannono-1,4-lactone. The latter was reduced to the lactol, converted to the Me glycoside and hydrogenated to the Me 6-bromo-2,6-dideoxyglycoside. Benzylolation of the hydroxy groups, elimination of bromine to a 5-ene and Ferrier carbocyclisation gave (2S,3R)-2,3-bisbenzyloxycyclohex-5-enone. 1,2-Addn. of benzyloxymethyl lithium at -110.degree.C gave a 6:1 mixt. of tertiary alcs.; the (1S) isomer was the major one. Reaction with trichloroacetyl isocyanate gave a carbamate, which when dehydrated to the cyanate, spontaneously underwent [1,3] sigmatropic rearrangement to an isocyanate, which on addn. of methanol gave the methylcarbamate. Basic hydrolysis of this compd. gave (2R,3R,5R)-5-amino-1-benzyloxymethyl-2,3-bis(benzyloxy)cyclohex-6-ene, which could be protected to 2-deoxyvalieneamine I. Reaction with 2-azidoethyl 2,3,4-tri-O-benzyl-6-O-triflyl-.alpha.-D-glucopyranoside gave the secondary amine, which was completely de-O-protected with sodium in ammonia to give 6-deoxy-6-[(1R,3R,4R)-3,4-dihydroxy-5-hydroxymethylcyclohex-5-enylamino]-D-glucose II, the 2-deoxyisomaltose analog of acarbose. Compds. I and II were tested for glucosidase inhibition; I was found to be a weak inhibitor of .alpha.-glucosidase.

L7 ANSWER 12 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:14385 CAPLUS

DOCUMENT NUMBER: 126:144467

TITLE: Synthesis of the first 1-azaanalogs of L-sugars

AUTHOR(S): Hansen, Anja; Tagmose, Tina M.; Bols, Mikael

CORPORATE SOURCE: Dep. Organic Chem., Technical Univ. Denmark, Lyngby, DK-2800, Den.

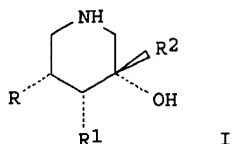
SOURCE: Tetrahedron (1997), 53(2), 697-706

CODEN: TETRAB; ISSN: 0040-4020

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English
GI



AB Two 1-azaanalogues of L-sugars were prepd. 2-C-methyl-1,2,5-trideoxy-1,5-imino-L-ribitol I (R = Me, R1 = OH, R2 = H) or 1-aza-2-deoxy-L-carbafucose was synthesized from L-arabinose in 9 steps. L-Arabinose was converted to the benzyl glycoside, and then to the 3,4-acetonide. Oxidn. of the 2-hydroxy group followed by Wittig methylenation gave benzyl 2-deoxy-3,4-O-isopropylidene-2-methylene-.beta.-L-erythro-pentopyranoside. Stereoselective hydrogenation followed by reductive debenzylation and redn. led to 2-deoxy-3,4-O-isopropylidene-2-C-methyl-L-ribitol, which was ditosylated and treated with benzylamine to give a piperidine. Finally deprotection gave I (R = Me, R1 = OH, R2 = H). 1,3,5-Trideoxy-2-C-hydroxymethyl-1,5-imino-D-erythro-pentitol I (R = OH, R1 = H, R2 = CH2OH) (II) was prepd. from lactose in 7 steps. 2,2'-O-isopropylidene-5-O-(4-methylbenzenesulfonyl)-D-isosaccharino-1,4-lactone was reacted with ammonia to give the 1,5-lactam. Deprotection and redn. gave II. Azasugar I was found to be a potent inhibitor of .alpha.-fucosidase.

L7 ANSWER 13 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:391353 CAPLUS
DOCUMENT NUMBER: 125:56413
TITLE: Manufacture of blue dye compositions with .beta.-glucosidase immobilized on ceramics
INVENTOR(S): Ichi, Takahito
PATENT ASSIGNEE(S): Saneigen Efu Efu Ai Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08067828	A2	19960312	JP 1994-203212	19940829

AB Stable and bright blue dye compns. are manufd. by hydrolyzing iridoid glycosides with .beta.-glucosidase (I) or I-producing microorganism immobilized on porous ceramics carriers, then treatment with primary amines. A concd. soln. of Gardenia jasminoides iridoid glycoside was passed through a column packed with I immobilized on SM 10 (porous ceramic) at 40.degree. and 4 kg/cm2 for 5 h to manuf. 98.5% iridoid. The iridoid was treated with hydrolyzed soybean at 40.degree. for 120 h in H2O to give blue dye compn.

L7 ANSWER 14 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:230424 CAPLUS
DOCUMENT NUMBER: 124:255528
TITLE: Glycoside and polysaccharide hydrolase activity of the rumen anaerobic fungus *Caecomyces communis* (Sphaeromonas communis SENSU Orpin) at early and final stages of the developmental cycle
AUTHOR(S): Gerbi, corinne; Bata, Jacqueline; Breton, Andre; Prensier, Gerard
CORPORATE SOURCE: Laboratoire de Microbiologie, Universite Blaise Pascal, Aubiere, 63177, Fr.
SOURCE: Curr. Microbiol. (1996), 32(5), 256-9
CODEN: CUMIDD; ISSN: 0343-8651
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The rumen anaerobic fungus *Caecomyces communis* was grown in a fermentor in Lowe medium. We studied four polysaccharide hydrolases and three glycoside hydrolases at early and final stages. We found a difference in cell assocn. for these enzymes depending on the developmental stage. The endocellulase and .beta.-D-fucosidase were early synthesized, and their activities decreased at the end of the developmental cycle. On the contrary, the .beta.-D-glucosidase,

.beta.-D-xylosidase and xylanase activities increased during the cycle. The avicelase and the CM-cellulase activities linked with thalli increased, whereas the extracellular activities of these enzymes decreased.

L7 ANSWER 15 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:158482 CAPLUS
DOCUMENT NUMBER: 124:226087
TITLE: Secretion of *Trichoderma reesei* .beta.-glucosidase by *Saccharomyces cerevisiae*
AUTHOR(S): Cummings, C.; Fowler, T.
CORPORATE SOURCE: Genencor Intl., South San Francisco, CA, 94080, USA
SOURCE: Curr. Genet. (1996), 29(3), 227-33
CODEN: CUGED5; ISSN: 0172-8083
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An intronless form the *bgl1* gene encoding an extracellular .beta.-glucosidase from *Trichoderma reesei* was expressed in the yeast *Saccharomyces cerevisiae* under the control of the yeast *GAL1* promoter. Transformation of a yeast strain with this vector resulted in transformants that produce and secrete active .beta.-glucosidase into the growth medium. Addnl., active recombinant .beta.-glucosidase protein was shown to be localized predominantly in the periplasmic space by using a p-nitrophenyl .beta.-D-glycoside hydrolysis assay against fractionated yeast cells. The apparent size of the recombinant enzyme was 10-15 kDa larger than that of the native form. Treatment of the recombinant .beta.-glucosidase with endoglycosidase-H indicated the apparent increase in size was due to N-linked glycosylation.

L7 ANSWER 16 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:125245 CAPLUS
DOCUMENT NUMBER: 124:219347
TITLE: Bacterial enzymes used for colon-specific drug delivery are decreased in active Crohn's disease
AUTHOR(S): Carrette, O.; Favier, C.; Mizon, C.; Neut, C.; Cortot, A.; Colombel, J. F.; Mizon, J.
CORPORATE SOURCE: Laboratoire de Biochimie and Laboratoire de Bacteriologie, Faculte de Pharmacie, Lille, 59006, Fr.
SOURCE: Dig. Dis. Sci. (1995), 40(12), 2641-6
CODEN: DDSCDJ; ISSN: 0163-2116
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Enzymes produced by colonic microflora have been proposed for triggering local delivery of anti-inflammatory azo-bond drugs and prodrugs to the colon. This approach could be advantageous in steroid treatment of inflammatory bowel diseases, thus sparing steroids' side effects. We recently demonstrated that the metabolic activity of digestive flora, assessed on the activity of fecal glycosidases, was decreased in patients with active Crohn's disease. In the present study, the azoreductase activity in feces of 14 patients with active Crohn's disease was decreased (11.39 +/- 7.93 mU/g F) as compared with 12 healthy subjects (51.13 +/- 21.39 mU/g F). .beta.-D-Glucosidase and .beta.-D-glucuronidase activities in fecal homogenates incubated under anaerobic conditions were also decreased in patients. These data bring into question the therapeutic usefulness for those patients of azo-bond drugs and glycoside prodrugs. They could explain the therapeutic failure of some of those drugs in active ileocolic and colic Crohn's disease.

L7 ANSWER 17 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:317639 CAPLUS
DOCUMENT NUMBER: 122:104442
TITLE: Enzymic hydrolysis of monoterpene glycosides of passion fruit and mango with a .beta.-glucosidase from yeast
AUTHOR(S): Drider, D.; Janbon, G.; Chemardin, P.; Arnaud, A.; Glazy, P.
CORPORATE SOURCE: ENSAM, INRA, Montpellier, 34060, Fr.
SOURCE: Bioresour. Technol. (1994), 49(3), 243-6
CODEN: BIRTEB; ISSN: 0960-8524
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Monoterpene glycosides extd. from passion fruit and mango were subjected to acid hydrolysis, with a phosphoric acid (H3PO4) soln., and enzymic hydrolysis using the exocellular .beta.-glucosidase of *Candida cacaui*. The enzyme was used free and in an immobilized form covalently bonded to sodium alginate beads. Following the extn. of free and volatile compds. in the fruit juices by hydrodistn., the bonded terpenols were hydrolyzed

and the free terpenols were recovered by hydrodistn. The .beta.-glucosidase enzyme hydrolysis was shown to be an effective process. Immobilized enzyme liberated less terpenols than did free enzyme.

L7 ANSWER 18 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:260606 CAPLUS
DOCUMENT NUMBER: 122:27356
TITLE: Characterization of .beta.-glucosidase activity in yeasts of enological origin
AUTHOR(S): Rosi, Iolanda; Vinella, M.; Domizio, P.
CORPORATE SOURCE: Dipartimento di Biologia, Universita della Basilicata, Potenza, Italy
SOURCE: J. Appl. Bacteriol. (1994), 77(5), 519-27
CODEN: JABAA4; ISSN: 0021-8847
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Three hundred and seventeen strains representing 20 species of yeasts were screened for the presence of .beta.-glucosidase activity. All of the strains of the species *Debaryomyces castellii*, *D. hansenii*, *D. polymorphus*, *Kloeckera apiculata* and *Hansenula anomala* showed .beta.-glucosidase activity, but only one of 153 strains of *Saccharomyces cerevisiae*. The other species behaved differently, depending upon the strain. Strains that hydrolyzed arbutin were checked to localize the .beta.-glucosidase activity. A strain of *D. hansenii* exhibited the highest exocellular activity and some wall-bound and intracellular activity. .beta.-Glucosidase synthesis by this yeast was enhanced by aerobic conditions of growth, was repressed by high glucose concn. (9%) and occurred during exponential growth. The optimum conditions for enzymic prepns. of *D. hansenii* were between pH 4.0 and 5.0 and 40.degree.C. A high concn. of ethanol and glucose did not reduce the enzymatic activity. Enzymic prepns. of *D. hansenii* released monoterpenols and other alcs. from a grape glycoside ext.

L7 ANSWER 19 OF 51 CAPLUS COPYRIGHT 2002 ACS

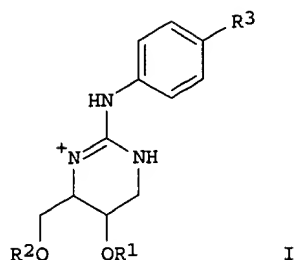
ACCESSION NUMBER: 1995:124291 CAPLUS
DOCUMENT NUMBER: 122:285260
TITLE: Purification and characterization of the endocellular .beta.-glucosidase of a new strain of *Candida entomophila* isolated from fermenting agave (*Agave* sp.) juice
AUTHOR(S): Gueguen, Yannick; Chemardin, Patrick; Arnaud, Alain; Galzy, Pierre
CORPORATE SOURCE: Ecole Nationale Supérieure Agronomique, Montpellier, 34060, Fr.
SOURCE: Biotechnol. Appl. Biochem. (1994), 20(2), 185-98
CODEN: BABIEC; ISSN: 0885-4513
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A yeast strain isolated in the lab. from fermenting agave (*Agave* sp.) juice was studied and classified as *Candida entomophila*. The .beta.-glucosidase of this yeast was purified by ion-exchange chromatog. and gel filtration. Its mol. mass estd. by gel filtration was 400 kDa. The oligomeric structure was detd. following treatment of the purified enzyme with SDS. Its optimum pH was between 5 and 6, and its optimum temp. was 60.degree.. The enzyme was active against sol. glucosides with (1.fwdarw.3)-.beta., (1.fwdarw.4)-.beta. and (1.fwdarw.4)-.alpha. linkage configuration, and it possesses (1.fwdarw.6)-.alpha.-arabinofuranosidase activity. It is competitively inhibited by glucose and by D-gluconic acid lactone. The enzyme was constitutive and a glucosyltransferase activity is obsd. in the presence of ethanol. Since the glycoside present in wines and fruit juices represent a potential source of arom. flavor, the possible use of the yeast glucosidase for the liberation of the bound aroma is discussed.

L7 ANSWER 20 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:49209 CAPLUS
DOCUMENT NUMBER: 122:314509
TITLE: Cyclic guanidinium ions as analogs of glycosyl cations are competitive and noncompetitive inhibitors of glycoside hydrolases
AUTHOR(S): Lehmann, Jochen; Rob, Beatrice
CORPORATE SOURCE: Inst. fuer Organische Chem. Biochem., Universitaet Freiburg, Freiburg, D-79104, Germany
SOURCE: Liebigs Ann. Chem. (1994), (8), 805-9
CODEN: LACHDL; ISSN: 0170-2041
DOCUMENT TYPE: Journal
LANGUAGE: German

GI



AB Four cyclic guanidinium compds. I ($R_1 = H$; $R_2 = H$; $R_1R_2 = CHPh$; $R_3 = NO_2NH^+$) were synthesized and found to be competitive and noncompetitive inhibitors of β -D-galactosidase (*E. coli*), α -D-glucosidase (yeast) and β -D-glucosidase (emulsin). The compds. were ineffective against α -D-mannosidase from jack beans. For the effect of compds. I, resembling hypothetical glucosyl and galactosyl cations, a flattened conformation as well as a permanent pos. charge is made responsible.

L7 ANSWER 21 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:481454 CAPLUS

DOCUMENT NUMBER: 121:81454

TITLE: Role of enzymes in the use of the flavor potential from grape glycosides in winemaking

AUTHOR(S): Gunata, Z.; Dugelay, I.; Sapis, J. C.; Baumes, R.; Bayonove, C.

CORPORATE SOURCE: Lab. des Aromes et Subst. Nat., INRA-IPV, Montpellier, 34060/01, Fr.

SOURCE: Prog. Flavour Precursor Stud. Proc. Int. Conf. (1993), Meeting Date 1992, 219-34. Editor(s): Schreier, Peter; Winterhalter, Peter. Allured: Carol Stream, Ill.

CODEN: 59YYAE

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Relatively high levels of glycosidic conjugates of monoterpenes and C13 norisoprenoids in grape make up an important reserve of flavor due to the sensory properties of aglycons. Glycosidases of grape and enol. yeast (*S. cerevisiae*) have only limited effects in releasing volatile compds. from glycosides during winemaking because of their relatively low activities. On the contrary exogenous fungal glycosidases appear to offer interesting challenges for technol. application. The use of enzyme preps. from *A. niger* with appropriate glycosidases during dry wine prepn. from arom. and non-arom. grape varieties resulted in a considerable release of flavor compds. such as geraniol, nerol, 3-hydroxy- β -damascone, 3-oxo- α -ionol and vomifolol from glycosidic precursors. Such hydrolytic enzyme preps. used in winemaking for the enhancement of wine flavor should not contain side activities inducing off-flavors.

L7 ANSWER 22 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:669504 CAPLUS

DOCUMENT NUMBER: 119:269504

TITLE: Enhancement of wine aroma by using enzymes

AUTHOR(S): Bayonove, C.; Gunata, Y. Z.; Sapis, J. C.; Baumes, R. L.; Dugelay, I.; Grassin, C.

CORPORATE SOURCE: IPV Lab. Aromes, INRA, Montpellier, Fr.

SOURCE: Vignevisini (1993), 20(9), 33-6
CODEN: VIGNDL; ISSN: 0390-0479

DOCUMENT TYPE: Journal

LANGUAGE: Italian

AB Fungal enzymes (β -glucosidase, α -arabinosidase, α -rhamnosidase, apiosidase) were added during vinification of red and white wines to enhance aroma by hydrolysis of terpene glycosides. The level of hydrolysis varied considerably depending on the grape cultivar, e.g. >80% in Sauvignon but \approx 46% in Muscat Ottonel. Addn. of the enzymes to the must intensified the aroma in organoleptic evaluations of the wine.

L7 ANSWER 23 OF 51 CAPLUS COPYRIGHT 2002 ACS

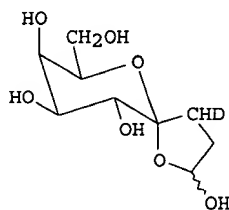
ACCESSION NUMBER: 1992:607677 CAPLUS

DOCUMENT NUMBER: 117:207677
 TITLE: Purification and characterization of an extracellular .beta.-glucosidase from the anaerobic fungus *Piromyces* sp. strain E2
 AUTHOR(S): Teunissen, Marcel J.; Lahaye, Danielle H. T. P.; In't Veld, Jos H. J.; Vogels, Godfried D.
 CORPORATE SOURCE: Fac. Sci., Univ. Nijmegen, Nijmegen, 6525 ED, Neth.
 SOURCE: Arch. Microbiol. (1992), 158(4), 276-81
 CODEN: AMICCW; ISSN: 0302-8933
 DOCUMENT TYPE: Journal
 LANGUAGE: English

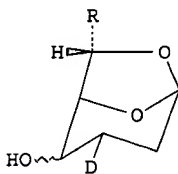
AB An extracellular .beta.-glucosidase (EC 3.2.2.21) from the anaerobic fungus *Piromyces* sp. strain E2 was purified. The enzyme is a monomer with a mol. mass of 45 kDa and a pI of 4.15. The enzyme readily hydrolyzes p-nitrophenyl-.beta.-D-glycoside, p-nitrophenyl-.beta.-D-fucoside, cellobiose, cellotriose, cellotetraose and cellopentaose but is not active towards Avicel, CM-cellulose, xylan, p-nitrophenyl-.beta.-D-galactoside and p-nitrophenyl-.beta.-D-xyloside. To cleave p-nitrophenyl-.beta.-D-glucoside the max. activity is reached at pH 6.0 and 55.degree., and the enzyme is stable up to 72 h at 40.degree.. Activity is inhibited by D-glucurono-.delta.-lactone, cellobiose, sodium dodecyl sulfate, Hg2+ and Cu2+ cations. With p-nitrophenyl-.beta.-D-glycoside, p-nitrophenyl-.beta.-D-fucoside, and cellobiose as enzyme substrates, the Km and Vmax values are 1.5 mM and 25.5 IU.cntdot.mg-1, 1.1 mM and 133 IU.cntdot.mg-1, and 0.05 mM and 55.6 IU.cntdot.mg-1, resp.

L7 ANSWER 24 OF 51 CAPLUS COPYRIGHT 2002 ACS

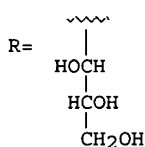
ACCESSION NUMBER: 1992:59760 CAPLUS
 DOCUMENT NUMBER: 116:59760
 TITLE: Synthesis of 4,8-anhydro-2,3-dideoxy-D-galacto- and -D-gluco-non-3-enose dimethyl acetal and their use as new probes for determining by 1H NMR spectroscopy the steric course of protonation by glycoside hydrolases
 AUTHOR(S): Fritz, Hans; Lehmann, Jochen; Schmidt-Schuchardt, Markus; Weiser, Wolfgang
 CORPORATE SOURCE: Inst. Org. Chem. Biochem., Univ. Freiburg, Freiburg/Br., D-7800, Germany
 SOURCE: Carbohydr. Res. (1991), 218, 129-41
 CODEN: CRBRAT; ISSN: 0008-6215
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



16



20



AB The title nonosulose derivs. 2 (D-galacto) and 4 (D-gluco) were prepd. by multistep syntheses. Addn. of water to the enolic double bonds of both compds. was catalyzed only by the corresponding enzymes .beta.-D-galactosidase from *Escherichia coli*, .alpha.-D-galactosidase from green coffee beans, and .beta.-D-glucosidase from sweet almonds, .alpha.-D-glucosidase from yeast. The enzymic hydration of 2, performed in D2O to analyze the steric course of the addn., gave 2,3-dideoxy-.alpha.-D-galacto-(3-3H)-nonos-4-ulose di-Me acetal, which when hydrolyzed gave an equil. mixt. of the spiranes 16 as the main products (85%). Borohydride redn. of the product of enzymic hydration gave a separable mixt. of the two epimers, convertible in acidic methanol for 8 h at 62.degree. into anhydro sugar 20. The rigid, bicyclic ring-systems allow facile assignment of the configuration at the monodeuterated C-3 as (S), thereby allowing detn. of the steric course of the initial, enzyme-catalyzed step, the deuteration of the enolic double bond in the substrates used.

L7 ANSWER 25 OF 51 CAPLUS COPYRIGHT 2002 ACS

09/806,413 Search Strategy/Results

ACCESSION NUMBER: 1991:654231 CAPLUS
 DOCUMENT NUMBER: 115:254231
 TITLE: Generation of oxidation artifacts during the hydrolysis of norisoprenoid glycosides by fungal enzyme preparations
 AUTHOR(S): Sefton, Mark A.; Williams, Patrick J.
 CORPORATE SOURCE: Aust. Wine Res. Inst., Glen Osmond, 5064, Australia
 SOURCE: J. Agric. Food Chem. (1991), 39(11), 1994-7
 CODEN: JAFCAU; ISSN: 0021-8561
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The glycosidic fraction of a Chardonnay grape juice was hydrolyzed with Rohapect C, Rohapect D5L, and Novoferm 12, and also with almond emulsin. The concns. of 9 of the aglycons, all C13 norisoprenoids, varied according to the conditions of the hydrolysis. Concns. of 3-hydroxy-.beta.-damascone, megastigm-5-en-7-yne-3,9-diol, 3-hydroxy-.beta.-ionone, megastigm-5-ene-3,9-diol, and 3-hydroxy-5,6-epoxymegastigm-7-en-9-one decreased significantly when the glycosidic fraction was treated with increasing levels of Rohapect C. Loss of these 3-hydroxymegastigmanes was accompanied by the formation of 3-oxo-.alpha.-damascone, 3-oxo-.beta.-damascone, and 9-hydroxymegastigma-4,6,7-trien-3-one and an increase in dehydrovomifoliol. Pure samples of 3-hydroxy-.beta.-damascone and its .beta.-D-glucopyranoside were partially oxidized by Rohapect C to the corresponding oxodamascones. Similar oxidative artifacts were obsd. when the Chardonnay glycosidic fraction was treated with Rohapect D5L and Novoferm 12. No oxidn. was obsd. with almond emulsin.

L7 ANSWER 26 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:407317 CAPLUS
 DOCUMENT NUMBER: 115:7317
 TITLE: Hydrolysis of soybean isoflavone glycosides by .beta.-glycosidases of bifidobacteria and lactic acid bacteria
 AUTHOR(S): Matsuyama, Jun; Setoguchi, Tatsuya; Arai, Chiaki; Kiyosawa, Isao
 CORPORATE SOURCE: Fac. Agric., Tamagawa Univ., Machida, 194, Japan
 SOURCE: Tamagawa Daigaku Nogakubu Kenkyu Hokoku (1990), (30), 33-42
 CODEN: TDNHAC; ISSN: 0082-156X
 DOCUMENT TYPE: Journal
 LANGUAGE: Japanese

AB In a survey of 5 strains of Bifidobacterium and 4 lactic acid bacteria, highest .beta.-glucosidase was found in Streptococcus thermophilus, and greatest .beta.-galactosidase was present in B. adolescentis. Daidzin and genistin in exts. of defatted soybean flour were hydrolyzed to their resp. aglycons (daidzein and genistein) by the bifidobacteria, S. thermophilus, and Lactobacillus acidophilus.

L7 ANSWER 27 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:118287 CAPLUS
 DOCUMENT NUMBER: 114:118287
 TITLE: Levels of activity of enzymes involved in anaerobic utilization of sugars by six yeast species: observations towards understanding the Kluyver effect
 AUTHOR(S): Sims, A. P.; Barnett, J. A.
 CORPORATE SOURCE: Sch. Biol. Sci., Univ. East Anglia, Norwich, NR4 7TJ, UK
 SOURCE: FEMS Microbiol. Lett. (1991), 77(2-3), 295-8
 CODEN: FMLED7; ISSN: 0378-1097
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The activities of pyruvate decarboxylase, alc. dehydrogenase, and certain glycosidases were measured for 6 sp. of yeast. Five of these yeasts could utilize 1 or more disaccharides aerobically, but not anaerobically, although all could use D-glucose anaerobically. I.e., each of the 5 showed the Kluyver effect; but the 6th yeast, Saccharomyces cerevisiae, did not do so. When grown on a glycoside with which it gave the Kluyver effect, each yeast had much less pyruvate decarboxylase activity than when grown on D-glucose or another glycoside. There was no consistent corresponding lowering of activity of either alc. dehydrogenase, or of the appropriate glycosidase. Hence, pyruvate decarboxylase may have a role in producing the Kluyver effect.

L7 ANSWER 28 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:78813 CAPLUS
 DOCUMENT NUMBER: 114:78813
 TITLE: Glycosidase activities in sound and rotten grapes in

relation to hydrolysis of grape monoterpenyl glycosides
 AUTHOR(S): Gunata, Y. Z.; Biron, C.; Sapis, J. C.; Bayonove, C.
 CORPORATE SOURCE: Inst. Prod. Vigne, INRA, Montpellier, F 34060, Fr.
 SOURCE: Vitis (1989), 28(4), 191-7
 CODEN: VITIAY; ISSN: 0042-7500

DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 114:78813

AB .beta.-D-Glucopyranosidase, .alpha.-L-arabinofuranosidase, and .alpha.-L-rhamnopyranosidase activities were studied in grapes, both during maturation and in sound and rotten mature fruits. Enzymic activities increased during maturation. At maturity, in sound grapes, .beta.-D-glucopyranosidase and .alpha.-L-arabinofuranosidase activities were the highest ones. Berry infection by fungi results in a decrease in .beta.-glucosidase activity, while the other glycosidase activities increase. The effect of an enzymic ext. from a culture of Botrytis cinerea towards synthetic terpenyl glycosides showed that hydrolysis was strong for .beta.-terpenyl rutinosides and weak for .beta.-terpenyl 6-O-.alpha.-L-arabinofuranosyl-.beta.-D-glucopyranosides.

L7 ANSWER 29 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:626835 CAPLUS
 DOCUMENT NUMBER: 113:226835

TITLE: Purification and characterization of an aspecific glycoside hydrolase from the anaerobic ruminal fungus Neocallimastix frontalis

AUTHOR(S): Herbraud, M.; Fevre, M.
 CORPORATE SOURCE: Lab. Biol. Cell. Fongique, Univ. Lyon 1, Villeurbanne, 69622, Fr.

SOURCE: Appl. Environ. Microbiol. (1990), 56(10), 3164-9
 CODEN: AEMIDF; ISSN: 0099-2240

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB A .beta.-glucosidase characterized by .beta.-fucosidase (EC 3.2.1.38) and .beta.-glucosidase (EC 3.2.1.21) activities was purified from the culture medium of N. frontalis grown on 0.5% Avicel. The enzyme had a mol. wt. of 120 kilodaltons and a pI of 3.85. Optimal activity against p-nitrophenyl-.beta.-D-fucoside and p-nitrophenyl-.beta.-D-glucoside occurred at pH 6.0 and 50.degree.. The .beta.-fucosidase and .beta.-glucosidase activities were stable at pH 6.0-7.8 and up to 40.degree.. They were both inhibited by gluconolactone, SDS, p-chloromercuribenzoate, and Hg2+. The enzyme had Km values of 0.26 mg/mL for p-nitrophenyl-.beta.-D-fucoside and 0.08 mg/mL for p-nitrophenyl-.beta.-D-glucoside. The purified protein also had low .beta.-galactosidase activity.

L7 ANSWER 30 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:512229 CAPLUS
 DOCUMENT NUMBER: 113:112229

TITLE: Effect of Methanobrevibacter smithii on xylanolytic activity of anaerobic ruminal fungi

AUTHOR(S): Joblin, K. N.; Naylor, G. E.; Williams, A. G.
 CORPORATE SOURCE: Biotechnol. Div., DSIR, Palmerston North, N. Z.
 SOURCE: Appl. Environ. Microbiol. (1990), 56(8), 2287-95
 CODEN: AEMIDF; ISSN: 0099-2240

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Three different ruminal anaerobic fungi, Neocallimastix frontalis PNK2, Sphaeromonas communis B7, and Piromonas communis B19, were grown axenically or in coculture with Methanobrevibacter smithii on xylan. N. frontalis and S. communis in monoculture and coculture accumulated xylobiose, xylose, and arabinose in the growth medium; arabinose was not metabolized, but xylobiose and xylose were subsequently used. The transient accumulation of xylose was much less evident in cocultures. Both the rate and extent of xylan utilization were increased by coculturing, and metabolite profiles became acetogenic as a result of interspecies H2 transfer; more acetate and less lactate were formed, while formate and H2 did not accumulate. For each of the 3 fungi, there were marked increases in the sp. activities of extracellular xylanase (.ltoreq.5-fold), .alpha.-L-arabinofuranosidase (.ltoreq.5-fold), and .beta.-D-xylosidase (.ltoreq.7-fold) upon coculturing. The stimulation of fungal enzymes from coculturing with M. smithii was independent of the growth substrate, and the magnitude of the stimulation varied according to the enzymes and the incubation time. For an N. frontalis-M. smithii coculture, the pos. stimulation was maintained during an extended (18-day) incubation period, and this affected not only hemicellulolytic enzymes but also polysaccharidase and glycoside

hydrolyase enzymes that were not involved in xylan breakdown. The specific activity of cell-bound endopeptidase was not increased under the coculture conditions used in this study. The higher enzyme activities in cocultures are discussed in relation to catabolite repression.

L7 ANSWER 31 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:33086 CAPLUS

DOCUMENT NUMBER: 112:33086

TITLE: Factors affecting the formation of polysaccharide depolymerase and glycoside hydrolyase enzymes by *Butyrivibrio fibrisolvens* NCDO 2249

AUTHOR(S): Williams, A. G.; Withers, Susan E.

CORPORATE SOURCE: Hannah Res. Inst., Ayr, KA6 5HL, UK

SOURCE: J. Appl. Bacteriol. (1989), 67(3), 299-308

CODEN: JABAA4; ISSN: 0021-8847

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Specific activities of hemicellulose-degrading polysaccharide depolymerase and glycoside hydrolase enzymes were measured in batch and continuous cultures of *B. fibrisolvens* NCDO 2249 grown on cellobiose or a hemicellulosic carbohydrate. Enzyme activities were influenced by the growth substrate and by the rate and stage of growth of the microorganism. In cellobiose batch cultures specific activities were max. as the growth rate declined and in the initial stages of the stationary phase. The growth substrate did not affect the range of glycoside hydrolases formed, although specific activities were substrate-dependent, with activity increases (10-200-fold) occurring in enzymes essential for effective substrate utilization. Appreciable xylanase activity was present only in xylan-growth cultures. The substrate effects were also evident in chemostat cultures. The activity response of the 9 enzymes monitored to growth rate changes differed in that while the activity of some enzymes, including xylanase, declined at high diln. rates the activities of others were not growth rate-dependent and were maintained over the range of diln. rates examd. Exocellular activities were detected only in spent media from cultures grown with a polymeric (hemicellulosic) carbohydrate.

L7 ANSWER 32 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:210978 CAPLUS

DOCUMENT NUMBER: 110:210978

TITLE: Bacterial manufacture of glycosides

INVENTOR(S): Kondo, Ryuichiro; Imamura, Hiroyuki

PATENT ASSIGNEE(S): Oji Paper Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63214191	A2	19880906	JP 1987-47448	19870304

AB Glycosides are manufd. by treating phenolic compds. or their derivs. and .beta.-linkage-contg. sugar donors with bacteria or .beta.-glucosidase. Thus, *Tyromyces palustris* FES 0507 was cultured in a medium contg. cellobiose, minerals, and vitamins at 25.degree. for 7 days, then cultured in the same medium addnl. contg. vanillyl alc. (I) at 25.degree. to produce vanillyl-.beta.-D-glucoside with the prodn. reaching 8.6% of I on the 8th day.

L7 ANSWER 33 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:4324 CAPLUS

DOCUMENT NUMBER: 110:4324

TITLE: Hydrolysis of flavonoids by human intestinal bacteria

AUTHOR(S): Bokkenheuser, Victor D.; Winter, Jeanette

CORPORATE SOURCE: Dep. Pathol., St. Luke's-Roosevelt Hosp. Cent., New York, NY, 10025, USA

SOURCE: Prog. Clin. Biol. Res. (1988), 280(Plant Flavonoids Biol. Med. 2: Biochem., Cell., Med. Prop.), 143-5

CODEN: PCBRD2; ISSN: 0361-7742

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Some *Bacteroides* strains were isolated from human feces. *Bacteroides distasonis* #1 elaborated a .beta.-glucosidase which hydrolyzed rutin to quercetin. *Bacteroides distasonis* #2 synthesized a .beta.-galactosidase and a .alpha.-rhamnosidase which converted robinin to kaempferol by

hydrolyzing a sugar flavonoid bond and rutin to 3-glucosyl-quercetin by hydrolyzing a sugar-sugar bond. It might be added that *Bacteroides loeschii*, recovered from the blood of a hospital patient hydrolyzed quercitrin to quercetin, thus elaborating an α -rhamnosidase. The latter enzymes did not hydrolyze rutin indicating that rhamnose-glucose bonds and rhamnose-flavonoid bonds require different enzymes. Enzyme specificity manifested itself in one more way: the *B. diastasonis* α -rhamnosidase hydrolyzed the flavonoid-rhamnose bond at C7 (robinin) but not at C3 (quercetin). β -Glucosidase was extractable from *B. diastasonis* following ultrasonication of the culture. The enzyme hydrolyzed p-nitrophenol-glycoside in a linear fashion and exhibited a specific activity of 1 μ mol/10 mg protein/10 min. Rutin was also hydrolyzed by mixed oral flora. The β -glucosidase was synthesized by obligate anaerobic organisms: a *Bifidobacterium* species, a *Clostridium*, and an unidentified organism. Moreover, glycosidase was also elaborated by several obligate anaerobes recovered from patients with bacteremia. Apparently, enzymes capable of hydrolyzing flavonoid glycosides are synthesized by a variety of obligate anaerobic species from the mouth, the gut, and from organisms causing septicemia in man.

L7 ANSWER 34 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:471964 CAPLUS

DOCUMENT NUMBER: 109:71964

TITLE: Role of the yeast *Saccharomyces cerevisiae* in the enzymic hydrolysis of terpenic heterosides of grape juice

AUTHOR(S): Dubourdieu, Denis; Darriet, Philippe; Ollivier, Christophe; Boidron, Jean Noel; Ribereau-Gayon, Pascal

CORPORATE SOURCE: Inst. Oenol., Univ. Bordeaux-II, Talence, 33405, Fr.

SOURCE: C. R. Acad. Sci., Ser. 3 (1988), 306(15), 489-93

CODEN: CRASEV; ISSN: 0764-4469

DOCUMENT TYPE: Journal

LANGUAGE: French

AB Free terpenes were formed in musts being fermented by *S. cerevisiae* that also formed β -glucosidases. Terpene formation was higher with a strain that released β -glucosidase earlier. Resting yeast also released terpenes from terpene glycosides.

L7 ANSWER 35 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:450611 CAPLUS

DOCUMENT NUMBER: 109:50611

TITLE: Characterization of glycoside and polysaccharide hydrolases secreted by the rumen anaerobic fungi *Neocallimastix frontalis*, *Sphaeromonas communis* and *Piromonas communis*

AUTHOR(S): Hebraud, Michel; Fevre, Michel

CORPORATE SOURCE: Lab. Differ. Fongique, Univ. Lyon, Villeurbanne, 69622, Fr.

SOURCE: J. Gen. Microbiol. (1988), 134(5), 1123-9

CODEN: JGMIAN; ISSN: 0022-1287

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The rumen anaerobic fungi *N. frontalis*, *S. communis*, and *P. communis* were grown in the presence of cellulosic substrate (sisal fibers) and the properties of the glycosidases and polysaccharide-degrading enzymes produced by the organisms were studied. β -D-Glucosidase (EC 3.2.1.21), β -D-fucosidase (EC 3.2.1.38), β -D-galactosidase (EC 3.2.1.23), β -1,3-glucanase (EC 3.2.1.6), β -1,4-glucanase (EC 3.2.1.4), and β -xylanase (EC 3.2.1.8) had pH optima of 6.0 and temp. optima under the conditions of the assay of 50-55.degree., whereas for β -xylosidase (EC 3.2.1.37) the optima were 6.5 and 39.degree. resp. The apparent Km values of individual enzymes secreted by the 3 fungi were similar. The results show that *S. communis*, *P. communis*, and *N. frontalis* produce the same range of enzymes, with similar properties, able to degrade cellulose and hemicellulose.

L7 ANSWER 36 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:614323 CAPLUS

DOCUMENT NUMBER: 107:214323

TITLE: Ultrastructural localization of glucoside residues on tissue sections by applying the enzyme-gold approach

AUTHOR(S): Bendayan, Moise; Benhamou, Nicole

CORPORATE SOURCE: Fac. Med., Univ. Montreal, Montreal, PQ, H3C 3J7, Can.

SOURCE: J. Histochem. Cytochem. (1987), 35(10), 1149-55

CODEN: JHCYAS; ISSN: 0022-1554

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The title approach was applied to animal and plant tissues. A

.beta.-glucosidase-Au complex was prepd. and used on thin tissue sections to reveal the corresponding substrate mols. by electron microscopy. Conditions for prepn. of the complex, as well as for its application, were detd. Once applied on thin tissue sections, the glucosidase-Au complex yielded labeling over the rough endoplasmic reticulum, mainly on the ribosomal side of the membranes, and over the dense chromatin in the nucleus. Mitochondria, Golgi app., and secretory granules in liver and pancreatic cells were free of Au particles. In plant cells, the labeling pattern was similar. In addn., the stroma regions of chloroplasts were densely labeled. In the extracellular space, labeling was found over the basal laminae of cells in animal tissues and over the fibrillar wall material bordering the intercellular space in plant tissues. Fungal cell cytoplasm was also labeled, as well as the membrane delineating mycoplasma-like organisms. Control conditions confirmed these labelings, demonstrating the possibility of revealing glucoside residues on tissue sections with high resolu. and specificity.

L7 ANSWER 37 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:436307 CAPLUS

DOCUMENT NUMBER: 107:36307

TITLE: Glycoside hydrolase enzymes present in the zoospore and vegetative growth stages of the rumen fungi *Neocallimastix patriciarum*, *Piromonas communis*, and an unidentified isolate, grown on a range of carbohydrates

AUTHOR(S): Williams, Alan G.; Orpin, Colin G.

CORPORATE SOURCE: Hannah Res. Inst., Ayr, UK

SOURCE: Can. J. Microbiol. (1987), 33(5), 427-34

CODEN: CJMIAZ; ISSN: 0008-4166

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The rumen fungi *N. patriciarum*, *P. communis*, and a morphol. distinct but unidentified isolate were cultivated on the polysaccharides starch, cellulose, xylan, and their principal component monosaccharides and disaccharides, and the range and specific activities of the glycoside hydrolases formed were monitored using glucooligosaccharide and p-nitrophenyl glycoside substrates. A wide range of enzyme activities was detected in preps. from vegetative growth and zoospores of all 3 isolates. Enzyme activity was also present in the culture medium. The specific activities were affected by the carbohydrate source available in the growth medium, although the more active hydrolases involved in the degradn. of plant structural and storage polysaccharides were formed on all 7 carbohydrate sources evaluated. Enzyme activities were increased in the zoospore, vegetative, and extracellular preps. after growth on the appropriate structurally related disaccharide or polysaccharide. The hemicellulolytic glycosidases (.alpha.-L-arabinofuranosidase, .beta.-D-xylosidase) were most active after growth on xylan, whereas .alpha.-/.beta.-glucosidase activity was increased with the corresponding glucan as growth substrate. However, whereas wide-ranging .beta.-glucosidase activity was detected following growth on maltose or starch, the .alpha.-glucosidase activities of *P. communis* were lower or undetectable in vegetative preps. grown on glucose or the .beta.-glucans cellobiose and cellulose.

L7 ANSWER 38 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:586438 CAPLUS

DOCUMENT NUMBER: 105:186438

TITLE: p-Nitrophenyl glycoside-hydrolyzing activities in bifidobacteria and characterization of .beta.-D-galactosidase of *Bifidobacterium longum* 401

AUTHOR(S): Tochikura, Tatsurokuro; Sakai, Kenji; Fujiyoshi,

Takako; Tachiki, Takashi; Kumagai, Hidehiko

CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan

SOURCE: Agric. Biol. Chem. (1986), 50(9), 2279-86

CODEN: ABCHA6; ISSN: 0002-1369

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Bifidobacteria showed higher hydrolyzing activity toward various p-nitrophenyl glycosides (p-NP glycosides) than some other intestinal bacteria. The reactions commonly found in the organisms involved p-NP .beta.-D-galactoside, p-NP .alpha.-D-glucoside, and p-NP .beta.-D-fucoside. Anal. of the enzyme species suggested that the .beta.-D-fucoside-hydrolyzing reaction, which is undetectable in other bacteria, was catalyzed by .beta.-D-galactosidase in many bifidobacteria and by .beta.-D-glucosidase in some strains. .beta.-D-Galactosidase, which hydrolyzed p-NP .beta.-D-fucoside (with 12% of its reactivity to p-NP .beta.-D-galactoside), was purified to homogeneity from *B. longum* 401. The enzyme was distinct from other

bacterial .beta.-D-galactosidases in its higher activity toward lactulose than lactose and the insensitivity of its formation to the C source in the culture medium. Some properties of the .beta.-D-galactosidase are described and compared with those of the lactase from the same organism.

L7 ANSWER 39 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:613316 CAPLUS

DOCUMENT NUMBER: 103:213316

TITLE: The production of hemicellulose-degrading enzymes by

Bacillus macerans in anaerobic culture

AUTHOR(S): Williams, Alan G.; Withers, Susan E.

CORPORATE SOURCE: Hannah Res. Inst., Ayr, KA6 5HL, UK

SOURCE: Appl. Microbiol. Biotechnol. (1985), 22(5), 318-24

CODEN: AMBIDG

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The cell-assocd. and exocellular hemicellulolytic polysaccharide depolymerase [9054-87-9] and **glycoside** hydrolase [9032-92-2] activity of *B. macerans* NCDO 1764 was monitored over a range of anaerobic growth conditions in batch and continuous culture. The enzymes were detectable throughout the complete growth cycle in batch culture reaching and maintaining max. levels in the stationary phase. In continuous culture enzyme activity was largely independent of growth rate ($D = 0.025-0.1$ h⁻¹) although the activity was reduced at higher diln. rates ($0.125-0.15$ h⁻¹). Although activity was detectable over a wide pH range (pH 5.5-7.5) it was pH dependent, and max. activities of both the cell-assocd. and exocellular enzymes were measured in cultures maintained at pH 6.5-7.0. The principal metabolites formed anaerobically from xylose [58-86-6] by *B. macerans* in batch and continuous culture were acetic acid [64-19-7], formic acid [64-18-6], and EtOH [64-17-5] which represented 95-99% of the products formed. Smaller amts. of acetone, DL-lactic acid and succinic acid were formed together with traces of butyric acid (<5 nmol/mL) and isovaleric acid (<25 nmol/mL). The proportions of the metabolites produced varied with growth conditions and were influenced by the pH of the culture and the rate and stage of growth of the microorganism.

L7 ANSWER 40 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:557060 CAPLUS

DOCUMENT NUMBER: 103:157060

TITLE: Formation of polysaccharide depolymerase and **glycoside** hydrolase enzymes by *Bacteroides ruminicola* subsp. *ruminicola* grown in batch and continuous culture

AUTHOR(S): Williams, Alan G.; Withers, Susan E.

CORPORATE SOURCE: Hannah Res. Inst., Ayr, KA6 5HL, UK

SOURCE: Curr. Microbiol. (1985), 12(2), 79-84

CODEN: CUMIDD; ISSN: 0343-8651

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The activities of 10 polysaccharide depolymerase and **glycoside** hydrolase enzymes were monitored in *B. ruminicola ruminicola* throughout the growth cycle and over a range of diln. rates (D) in C-limited continuous (chemostat) culture. The enzymes were principally cell assocd., and the specific activities increased throughout the growth cycle to reach max. levels in the late exponential and stationary growth phases. In chemostat-grown cells, the activities were growth rate dependent, were highest at the lowest value of D examd. ($0.025/h$), and remained const. over a wide range of growth rates ($D = 0.05-0.15/h$). The specific activities were lower in cells with a generation time of 3 h ($D = 0.225/h$). The major metabolites formed from xylose, in batch and continuous cultures, were lactic, acetic, and succinic acids, with traces (.apprx.1-2% of total acid prodn.) of branched and straight-chain C3-C5 volatile fatty acids. The proportions of the metabolites produced varied with the stage and rate of growth.

L7 ANSWER 41 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:32032 CAPLUS

DOCUMENT NUMBER: 102:32032

TITLE: Drug glycosides: potential prodrugs for colon-specific drug delivery

AUTHOR(S): Friend, David R.; Chang, George W.

CORPORATE SOURCE: Dep. Nutr. Sci., Univ. California, Berkeley, CA, 94720, USA

SOURCE: J. Med. Chem. (1985), 28(1), 51-7

CODEN: JMCMAR; ISSN: 0022-2623

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The 21-yl .beta.-D-glucosides and galactosides of dexamethasone, prednisolone, hydrocortisone, and fludrocortisone and prednisolone-21-yl .beta.-D-cellobioside [92901-27-4] were prepd. by a modified Koenigs-Knorr reaction. The deacetylated glycoside prodrugs, along with the p-nitrophenyl derivs. of .beta.-D-glucoside, galactoside, and cellobioside, were subjected to hydrolysis by the contents of the rat stomach, proximal small intestine (PSI), distal small intestine (DSI), and cecum. All the prodrugs were hydrolyzed slowly by PSI and stomach contents, more rapidly by contents of the DSI, and most rapidly by cecal contents. Hydrolysis rates catalyzed by DSI contents decreased in the following order: prednisolone-21-yl .beta.-D-galactoside [92901-24-1] > prednisolone-21-yl .beta.-D-glucoside [88158-44-5] > prednisolone-21-yl .beta.-D-cellobioside > dexamethasone-21-yl .beta.-D-galactoside [92901-23-0] > dexamethasone-21-yl .beta.-D-glucoside [88158-43-4]. Hydrolysis of the prednisolone cellobioside was only 1/2 that of glucoside and 1/4 that of the galactoside. Hydrolysis of all the prodrugs in cecal contents was rapid, with the exceptions of hydrocortisone-21-yl .beta.-D-glucoside [92901-21-8] and fludrocortisone-21-yl .beta.-D-glucoside [92901-22-9], which were hydrolyzed more slowly than the other glucoside prodrugs. Eadie-Hofstee plots for hydrolysis of the glucoside compds. suggested that bacterial .beta.-D-glucosidase [9001-22-3] activity in the colon may be more heterogeneous in nature than .beta.-D-galactosidase [9031-11-2] activity. The logarithm of the partition coeff. (octanol-buffer) of the cellobioside (-0.56) was considerably lower than that of the other prodrugs, which ranged from 0.11 to 0.84; comparative detns. for the free steroids ranged from 1.54 to 1.73. These relative rates of hydrolysis and relative lipophilicities, along with previously reported animal expts., enable one to est. the site specificity of glycoside prodrugs prior to extensive animal studies.

L7 ANSWER 42 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1984:626388 CAPLUS
DOCUMENT NUMBER: 101:226388
TITLE: Glycoside hydrolases of rumen bacteria and protozoa
AUTHOR(S): Williams, Alan G.; Withers, Susan E.; Coleman, Geoffrey S.
CORPORATE SOURCE: Dep. Anim. Nutr. Prod., Hannah Res. Inst., Ayr, KA6 5HL, UK
SOURCE: Curr. Microbiol. (1984), 10(5), 287-93
CODEN: CUMIDD; ISSN: 0343-8651
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Sixteen strains of rumen bacteria and 21 protozoal prepns. were screened for glycoside hydrolase and phosphatase activity, using 22 nitrophenyl glycoside substrates. The range and level of bacterial enzyme activities were species dependent, although the glycosidases assocd. with plant cell wall breakdown were most active in the cellulolytic and hemicellulolytic species. Alk. phosphatase occurred widely in the organisms examd., but was most active in the 2 Bacteroides rumenicola strains. A wide range of enzyme activities also was detected in the holotrich and Entodiniomorphid ciliates isolated from the rumen or cultured in vitro. The glycosidases involved in cellulose and hemicellulose breakdown were detected in all of the protozoa examd., and, with the exception of Entodinium species, were most active in the Entodiniomorphid protozoa; .alpha.-L-arabinofuranosidase, an essential hemicellulolytic glycoside hydrolase, was particularly active in this latter group of ciliates.

L7 ANSWER 43 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1984:468966 CAPLUS
DOCUMENT NUMBER: 101:68966
TITLE: The distribution of polysaccharide-degrading enzymes in the bovine digesta ecosystem
AUTHOR(S): Williams, Alan G.; Strachan, Norman H.
CORPORATE SOURCE: Hannah Res. Inst., Ayr, KA6 5HL, UK
SOURCE: Curr. Microbiol. (1984), 10(4), 215-20
CODEN: CUMIDD; ISSN: 0343-8651
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The location and level of activity of the principal polysaccharidases and glycoside hydrolases involved in the degrdn. of plant structural and storage polysaccharides were monitored in microbial populations isolated from liq. and particulate phases of bovine rumen digesta. The 3 principal subpopulations, and their constituent subgroups studied, all contained polysaccharide depolymg. enzymes; however, the specific

activities of the enzymes that degraded the plant cell wall structural polymers were highest within the adherent particle-assocd. populations. Sep. functional groups of organisms could be recognized in the particle-assocd. population by their distinctive enzyme profiles.

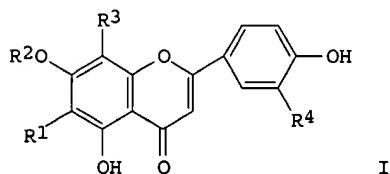
L7 ANSWER 44 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1982:611189 CAPLUS
DOCUMENT NUMBER: 97:211189
TITLE: Characterization and quantification of acid phosphatase and glycoside hydrolases in rabbit cornea
AUTHOR(S): Schive, Kirsti; Volden, Gunnar
CORPORATE SOURCE: Dep. Ophthalmol., Univ. Tromso, Tromso, N-9012, Norway
SOURCE: Acta Ophthalmol. (1982), 60(4), 590-8
CODEN: ACOPAT; ISSN: 0001-639X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The optimal reaction conditions and kinetic properties of 8 lysosomal hydrolases in rabbit cornea detd. with the use of fluorogenic derivs. of 4-methylumbelliferone are described. The enzymes studied were .alpha.- and .beta.-glucosidase, .alpha.- and .beta.-galactosidase, .alpha.-mannosidase, .beta.-acetylglucosaminidase, .beta.-glucuronidase, and acid phosphatase. Na taurocholate was an essential requirement for .beta.-glucosidase activity. Approx. the same pH optimum values, Km values, and sensitivity to inhibitors were found as by other investigators in other tissues. The reaction conditions described in this report can be used for studying the influence of phys., chem., viral, bacterial agents, etc., on the cornea and further for the diagnosis of eventual lysosomal storage diseases.

L7 ANSWER 45 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:581552 CAPLUS
DOCUMENT NUMBER: 95:181552
TITLE: Effect of structure of phenolic compounds on the inhibition of the growth of *Phytophthora parasitica* and the activity of parasitogenic enzymes. V. Flavones, O- and C-glycosides
AUTHOR(S): Ravise, A.; Chopin, J.
CORPORATE SOURCE: Lab. Chim. Biol., Univ. Claude Bernard, Villeurbanne, 69621, Fr.
SOURCE: Phytopathol. Z. (1981), 100(3), 257-69
CODEN: PHYZA3; ISSN: 0031-9481
DOCUMENT TYPE: Journal
LANGUAGE: French
GI



AB Apigenin (I; R1 = R2 = R3 = R4 = H) [520-36-5], luteolin (I; R1 = R2 = R3 = H, R4 = OH) [491-70-3], luteolin 7-glucoside (I; R1 = R3 = H, R2 = .beta.-glucopyranosyl, R4 = OH) [5373-11-5], vitexin (I; R1 = R2 = R4 = H, R3 = .beta.-glucopyranosyl) [3681-93-4], isoorientin (I; R1 = .beta.-glucopyranosyl, R2 = R3 = H, R4 = OH(sic)) [4261-42-1], isoswertisin (I; R1 = R4 = H, R2 = Me, R3 = .beta.-D-glucopyranosyl) [6980-40-1], molludistin (I; R1 = R4 = H, R2 = Me, R3 = .alpha.-L-arabinopyranosyl) [66274-25-7], and schaftoside (I; R1 = .beta.-D-glucopyranosyl; R2 = R4 = H; R3 = .alpha.-L-arabinopyranosyl) [51938-32-0] inhibited the mycelial growth and asexual reprod. of *Phytophthora parasitica*, *Verticillium albo-atrum*, and *Colletotrichum musae* in vitro. The C-glycosyl flavones were more toxic than the corresponding aglycones. The pectic hydrolases endopolymethylgalacturonase, endopolygalacturonase, as well as endopectin transeliminase and .beta.-glucosidase were inhibited by the compds. to various degrees.

L7 ANSWER 46 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:188559 CAPLUS

09/806,413 Search Strategy/Results

DOCUMENT NUMBER: 94:188559
 TITLE: Influence of growth medium on adsorption of Streptococcus mutans, Actinomyces viscosus, and actinomyces naeslundii to saliva-treated hydroxyapatite surfaces
 AUTHOR(S): Peros, W. J.; Gibbons, R. J.
 CORPORATE SOURCE: Forsyth Dent. Cent., Northeast. Univ., Boston, MA, 02115, USA
 SOURCE: Infect. Immun. (1981), 32(1), 111-17
 CODEN: INFIBR; ISSN: 0019-9567
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Influence of the growth medium on the ability of strains of S. mutans, A. viscosus, and A. naeslundii to attach to saliva-treated hydroxylapatite (S-HA) surfaces was studied. Strains were grown in chem. defined medium (CDM); in CDM supplemented with gastric mucin or with filter-sterilized or 60Co-irradiated saliva from human donors of blood types A, B, or O; in trypticase soy broth; and in Todd-Hewitt broth. Adherence of S. mutans H12 to S-HA varied when the streptococci were grown in saliva-supplemented CDM, but the no. of cells which attached was generally within 2-fold of that of CDM-grown cells. Attachment of A. viscosus S2 and LY7 and of A. naeslundii S4 and L13 was similar when grown in CDM or in CDM supplemented with saliva, but it increased for organisms grown in CDM supplemented with gastric mucin. None of the strains studied appeared to destroy the blood group reactivity of the added salivary components, and they attached equally well to HA treated with homologous or heterologous saliva from that present in the medium in which they were grown. The A. viscosus strains adsorbed in 25-40% higher nos. to HA treated with blood type B saliva than with type A saliva, irres. of the medium used for growth. S. mutans H12 cells displayed .alpha.- and .beta.-glucosidase and .alpha.-galactosidase activity; the Actinomyces strains exhibited these activities plus .beta.-galactosidase. The levels of these glycoside hydrolases did not correlate with cell adsorption to S-HA. The apparent weak influence of the growth medium on attachment of S. mutans was studied further. Strains of S. mutans isolated from the saliva of 5 human donors were made resistant to streptomycin, grown in CDM, and then added to new saliva samples from the resp. donors from which they were obtained. The in vitro-grown cells attached to S-HA comparably to S. mutans cells naturally present in the saliva.

L7 ANSWER 47 OF 51 CAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1981:78089 CAPLUS
 DOCUMENT NUMBER: 94:78089
 TITLE: Toxic effects of cycasin, the glycoside of cycad plant, upon several biology species
 AUTHOR(S): Kobayashi, A.; Tadera, K.; Yagi, F.
 CORPORATE SOURCE: Fac. Agric., Kagoshima Univ., Kagoshima, Japan
 SOURCE: Nat. Toxins, Proc. Int. Symp. Anim., Plant Microb. Toxins, 6th (1980), Meeting Date 1979, 647-54.
 Editor(s): Eaker, D.; Waldstroem, T. Pergamon: Oxford, Engl.
 CODEN: 44VRAY
 DOCUMENT TYPE: Conference
 LANGUAGE: English

AB Toxic effects of cycasin [14901-08-7] were examd. in microorganisms, plants, and insects. Cycasin developed generally not only retardation of growth but redn. in the characteristic products of each microorganism. The prodn. of kojic acid [501-30-4] by Aspergillus oryzae was accelerated. Spore-formation was specifically inhibited in fungi. Germination and growth of various cereal seeds were interfered by cycasin. Respiration of the treated seedlings was low, and necrosis and death occurred. The activity of .alpha.-amylase [9000-90-2] and the content of gibberellins were low. An emergence-mechanism of cycasin-toxicity was proposed; cycasin is hydrolyzed by .beta.-glucosidase, and the liberated aglycone is oxidized by alc. dehydrogenase [9031-72-5] to give the aldehyde-form of the aglycone, which would interfere the formation of gibberellin in the embryo parts and/or the de novo synthesis of .alpha.-amylase. Larvae of cabbage army worm and silk worm melanized themselves heavily, pupated incompletely and died. As a whole, the respiratory or red-ox system was disturbed by the aglycone of cycasin.

L7 ANSWER 48 OF 51 CAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1978:101289 CAPLUS
 DOCUMENT NUMBER: 88:101289
 TITLE: Occurrence of glycoside hydrolases in plant pathogenic-and-related-bacteria
 AUTHOR(S): Hayward, A. C.

09/806,413 Search Strategy/Results

CORPORATE SOURCE: Dep. Microbiol., Univ. Queensland, St. Lucia, Aust.
SOURCE: J. Appl. Bacteriol. (1977), 43(3), 407-11
CODEN: JABAA4; ISSN: 0021-8847

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Tests were conducted on 128 isolates representing 37 species and 6 genera of plant pathogenic and related bacteria for .beta.-galactosidase, .alpha.-glucosidase, .beta.-glucosidase, and .beta.-xylosidase, with the corresponding nitrophenyl glycopyranosides as substrates. *Agrobacterium tumefaciens*, *Corynebacterium flaccumfaciens*, *C. michiganense*, *Flavobacterium pectinovorum*, and *Pseudomonas maltophilia* showed activity on all 4 substrates. *Xanthomonas albilineans* and 3 nomenclotypes of the *X. campestris* group had little or no .alpha.-glucosidase activity, but all other tests with *Xanthomonas* species were pos. None of the fluorescent pseudomonads examined possessed .beta.-galactosidase, but *P. stizolobii*, *P. andropogonis*, and *P. rubrisubalbicans* among the nonfluorescent pseudomonads showed activity.

L7 ANSWER 49 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1976:402508 CAPLUS

DOCUMENT NUMBER: 85:2508

TITLE: Cyanogenetic glycosides and enzymes: detection and estimation of hydrocyanic acid in several species, distribution of linamarase

AUTHOR(S): Plouvier, Victor

CORPORATE SOURCE: Lab. Chim. Appl. Corps Org., Mus. Hist. Nat., Paris, Fr.

SOURCE: C. R. Hebd. Seances Acad. Sci., Ser. D (1976), 282(8), 723-6

CODEN: CHDDAT

DOCUMENT TYPE: Journal

LANGUAGE: French

AB The presence of a cyanogenic heteroside hydrolyzable by .beta.-glucosidase has been established or confirmed in several plants. The stem leaves of *Aster ptarmicoides* contained a cyanogenic heteroside but their .beta.-glucosidase was insufficiently active to induce hydrolysis. Linamarase, an enzyme specific for linamaroside and lotaustraloside, was very widely distributed in the Thallophytes, less so in higher plants; its presence in certain species is related to contamination by bacteria.

L7 ANSWER 50 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:543442 CAPLUS

DOCUMENT NUMBER: 83:143442

TITLE: Rapid method for identifying bacterial enzymes

AUTHOR(S): Maddocks, J. L.; Greenan, Mary J.

CORPORATE SOURCE: Welsh Natl. Sch. Med., R. Infirm., Cardiff, Wales

SOURCE: J. Clin. Pathol. (1975), 28(8), 686-7

CODEN: JCPSAK

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A simple and rapid method for detecting bacterial enzymes was developed depending on the release of the fluorescent reaction product methylumbelliferone from the nonfluorescent substrate, the appropriate methylumbelliferyl glycoside. The substrates used and the corresponding enzymes detected were: 4-methylumbelliferyl-.beta.-D-glucopyranoside, -.beta.-D-galactopyranoside, -.beta.-D-glucuronide, -2-acetamido-2-deoxy-.beta.-D-glucopyranoside, and -.alpha.-D-mannopyranoside for the enzymes .beta.-glucosidase (I), .beta.-galactosidase (II), .beta.-glucuronidase (III), .beta.-acetylglucosaminidase, and .alpha.-mannosidase, resp. The detection of I, II, and III in *Escherichia coli* and of none of these glycosidases in *Pseudomonas aeruginosa* showed the applicability of the method.

L7 ANSWER 51 OF 51 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1973:488193 CAPLUS

DOCUMENT NUMBER: 79:88193

TITLE: Effect of the carbohydrate moiety on biological activities of synthetic glycosides of medicagenic acid

AUTHOR(S): Gestetner, B.; Assa, Y.; Rotman, Miriam

CORPORATE SOURCE: Fac. Agric., Hebrew Univ. Jerusalem, Rehovot, Israel

SOURCE: Experientia (1973), 29(5), 529-30

CODEN: EXPEAM

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Synthetic glycosides of medicagenic acid (I) [599-07-5] were

fungistatic and hemolytic to the same extent as natural lucerne saponin, and the biol. properties were not influenced by the carbohydrate moiety of the synthetic glycosides as long as the moiety was composed of 1 or 2 hexoses and did not cause extreme changes in some properties such as soly. The fungistatic effect of I was greater and the I hemolytic activity was less than that of the glycosides, due to the lower water soly. of I. In the synthetic compds., the glycosidic bond between the sugar and aglycone was cleaved by incubation with almond .beta.-glucosidase [9001-22-3] but not with yeast .alpha.-glucosidase [9001-42-7].

(FILE 'HOME' ENTERED AT 06:35:42 ON 20 MAR 2002)

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SEA PRIMEVEROSIDASE

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L2 24 S PRIMEVEROSIDASE

FILE 'REGISTRY' ENTERED AT 06:41:49 ON 20 MAR 2002

L3 1 S PRIMEVEROSIDASE/CN

FILE 'CAPLUS' ENTERED AT 06:43:29 ON 20 MAR 2002

L4 6434 S L3

L5 1758 S L4 AND (MICROORGANISM OR BACTERIA# OR FUNG? OR YEAST)

L6 65 S L5 AND GLYCOSIDE

L7 51 S L6 NOT PY>1998

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